SL-II MC-624/1
Time: 06:07 CDT, 14:11:01 GMT
6/7/73

PAO This is Skylab Control at 11 hours 1 minute Greenwich mean time. We're standing by for acquisition at - of Skylab at the Honeysuckle Creek station in Australia. Expect to wake up the crew at that time, if they're not already awake. Vehicle status has not changed over night. CBRMs 3 and 15 are still offline and number 17 still has a degraded output 4 to 4-1/2 amps below what's expected. There was no TACS gas usage over night. We'll stand by for the wakeup call.

CC Good morning, Skylab. This is Houston. We got you at Honeysuckle for 5 minutes.

SC Go ahead, Houston.

CC Hi there.

CC Skylab, Houston. We're starting our morning chores on commanding. We're going back to solar inertia mode and closing fine sensor doors.

SC How did the inertia go last night? (Garble).

CC Sorry, Joe. Didn't copy the question.

SC I'll catch you later, I'm at a bad VOX.

CC Okay, we're about 1 minute from LOS here. We're going to see you at Hawaii at 11:23.

PAO This is Skylab Control; 11 hours and 9 minutes Greenwich mean time. We've had loss of signal at Honeysuckle. The Hawaii station will acquire in about 13-1/2 minutes. Entire day today will be devoted to the extravehicular activity and preparations for that activity and cleanup after the activity. EVA designed to free the solar array wing in an attempt to improve the electrical power situation on Skylab. Two Apollo telescope mount activities may be performed later this evening by Joe Kerwin, the science pilot, and Paul Weitz, the pilot. However, other than that and a short break for housekeeping tasks, the entire day will be devoted to the extravehicular activity. At 11 hours 10 minutes Greenwich mean time, this is Skylab Control.

END OF TAPE

SL-11 MC623/1
Time: 06:22 CDT, 14:11:22 GMT
6/7/73

PAO This is Skylab Control at 11 hours 22 minutes Greenwich mean time. Skylab about to be acquired at the Hawaii Station. Now on its 343rd revolution of the earth. We'll stand by for acquisition at Hawaii.

CC Hi there, Skylab; Houston. We got you at Hawaii for 7 minutes.

SC Okay.

SC I say, Houston, how did the momentum go last night? We did not inhibit. We found a star instead that looked like we had a good Nz; so I'm interested in how things came out.

CC Joe, that work you did on the startracker fixed us up real fine, and we had no problems with momentum throughout the evening.

SC Okay.

SC Say, Dick, there was a general message sent up during the night or morning sometime, and one of them was on the MOL SIEVE.

CC Roger.

SC The answer is yes.

CC Okay, thank you much.

SC And you might pass on to the ECS guys that I inadvertently turned that thing off yesterday, and that's what brought to mind the whole business about checking out the primary timer. We need all kinds of word on what's supposed to happen when you initially activate a timer. Well, I got to playing with the secondary one yesterday, in the course of putting it back on, and the secondary timer on MOL SIEVE A worked like we always thought it would work. That is, regardless of BED position, as soon as you turn on that timer, it immediately vents A to adsorb and B to desorb.

CC Roger; copy.

SC And we heard they weren't supposed to work like that, but that one does. Even if it's already there, it'll send a squirt of nitrogen through there and just dump it right away. But it works like we thought it didn't anymore.

CC Hey, Paul, are you in secondary now?

SC That's affirm.

CC Okay.

CC Well, PLT, that's all kind of interesting. The EGIL says that it can happen the way you described. It will not - He thinks though it will not necessarily happen that way everytime. So possibly it's been just coincidence so far. At any rate, we are going to schedule a - a good timer checkout when we get to it.

SC Okay. Darn it, let's say that my data, or

SL-II MC625/2
Time: 06:22 CDT, 14:11:22 GMT
6/7/73

what I'm basing my remark on is the fact that I turned the MOL SIEVE - I inadvertently turned it off, turned it back on, and heard it dump the gas but not cycle. You know you can hear - that thing gives you a big sigh in your face when it cycles, and I didn't hear it do that. So I opened up the cover and looked, and A was in adsorb, B was in desorb. And I thought I said, "Well, I wonder if I'm double stroking that bed? So I'll hit it one time and see if it cycles." So I turned the timer off, back on, and gave it a shot of air and dumped it, and nothing happened to the BED indicators. They stayed where they were. So I watched it, thinking about what EGIL is going to say, for a minute or two, and then I turned it off and back on, and the same thing happened. It gave it another shot of nitrogen, dumped it, and the BEDS stayed where they were.

CC Roger; understand.

CC Skylab, Houston. We're about 30 seconds from LOS. We're going to have a short break. See you at Goldstone at 11:31.

SC Roger, Dick.

END OF TAPE

SL-II MC626/1
Time: 06:31 CDT, 14:11:31 GMT
6/7/73

CC Hello again, Skylab. This is Houston, and we've got you for about the next 8 minutes.
SC Roger.
CC Skylab, Houston. We're going to have a short break, and we'll see you at Bermuda.
SC Roger, Richard.

END OF TAPE

SL-II MC-627/1
Time: 06:42 CDT, 14:11:42 GMT
6/7/73

CC Hello ag in, Skylab. We're at Bermuda for the next 6 minutes.

SC Okay, Houston.

CC Skylab, Houston. We're one minute to LOS. We're going to see you at the Canary Islands at 11:53.

SC Roger, Dick.

PAO This is Skylab Control; 11 hours 51 minutes Greenwich mean time. We've had loss of signal at Bermuda. There was no air-ground conversation during this pass over the United States, other than the usual amenities at AOS and LOS. We'll pick up Skylab at the Canary Island Station in about a minute and a half. We'll continue to stand by for that pass.

END OF TAPE

SL-II MC-628/1
Time: 06:52 CDT, 14:11:52 GMT
6/7/73

CC Skylab, Houston. We're AOS at Canary for 10 minutes.

SC Roger, Dick. And we just passed over an area that's almost like Meteorology for Naval Aviators textbook pictures of developing cyclonic depressions. They got a tropical depression out here about oh a couple of 100 miles behind us now?

CC Let me check with the weather man, Paul.

CC Skylab, Houston. There is a very large low pressure center that you just passed over and it's about a 43 degrees north. So it can hardly be a tropical depression, but it is - it is a large low area. And that's probably what you saw.

SC Yeah. It's loud and clear out there.

CC Skylab, Houston. We're about 1 minute from LOS at Canaries. You guys are still on a long descending pass down the African Continent. And we're going to see you at Honeysuckle at 12:38.

SC Roger, Dick.

PAO This is Skylab Control at 12 hours 4 minutes Greenwich mean time. Skylab has passed out of range of the Canary Station now. At acquisition of the spacecraft at Canaries, the Pilot Paul Weitz reported sighting what he thought was a classic textbook developing cyclonic depression just shortly before AOS. Checked with the weather man; showed that there is a large low pressure center in that area 42 degrees north. He described it, however, as a plain old storm, nothing too fancy. We'll next acquire Skylab at the Honeysuckle Creek, Australia, Station in 33 minutes. It's about 1 minute after the crew is scheduled to begin preparations for the upcoming Extravehicular Activity. Those preparations scheduled to begin at 15 hours, 37 minutes Greenwich mean time, or 7:37 I beg your pardon, those are scheduled to begin at 12:40 Greenwich mean time, or 7:40 central daylight time. Hatch opening is scheduled at 15 hours, 37 minutes Greenwich mean time or 10:37 central daylight time. At 12 hours 6 minutes this is Skylab Control.

END OF TAPE

SL-1I MC629/1
Time: 07:37 CDT, 14:12:37 GMT
6/7/73

PAO This is Skylab Control 12 hours 37 minutes Greenwich mean time. We're about 1/2 minute away from acquisition at Honeysuckle. EVA preparation is scheduled to start 12 hours 40 minutes. The maroon team has taken over in the Mission Operations Control Room. Flight Director is Milton Windler. CAP COM Astronaut Bob Crippen and the backup crew Commander Astronaut Russell Schweickart is at the CAP COM console also. We'll stand by for the Honeysuckle pass.

CC Good morning, Skylab. We've got you over Honeysuckle for about 8-1/2 minutes.

SC Roger, Houston. I'm ready to go ahead with ATM C&D panel configuration procedure, okay?

CC Stand by.

SC And another thing, I want you to verify on the checklist on page 1.2-3 in the right hand corner that was Xed out before - do you want me to close the OWS panel 2 valve or not?

CC Getting a reading on that, Paul. Hold on.

SC Okay.

CC Okay, that's an affirmative P.J.

SC On which one? On the N2 valve?

CC Yes sir, affirmative on the N2. What was the other one?

SC I'm ready to do a "preps" with ATM C&D panel configuration soon as you guys say it's okay.

CC Okay. You've got a GO on that, Paul.

SC You're easy to get along with this morning. Thank you.

SC Houston, CDR.

CC Go ahead.

SC Oh my God, is this Rusty?

CC That's affirmative.

SC You better give us - what's the earliest time we can start, Rusty?

CC Okay, you've got a sunset at right around 14:10. Hold on, I'll get the exact time.

SC Okay. I'm not sure that we'll make that but there's - we're - try to (garble) things and just kinda how fast it goes, otherwise we'll cool it to the right time.

CC Okay, we understand. And we're sort of semi-prepared for that. Let me give you an exact time here, Pete. Okay, the prior sunset time is about 14:03.

CC And Pete for positive ID purposes we'd like just a word of confirmation that you'll be playing the role of EV1 and that Dr. Kerwin will be playing the role of EV2.

SC Say again Rusty. I was top side.

CC Roger. Since we don't have any red stripes around the arm we're just interested in being positive that the player for EV1 will be the commander and that the player for EV2 will be the SPT. Is that correct?

SC That's Charlie.

CC Charlie Pete Conrad.

SC Okay, let me tell you where we are. I'm doing the visors right now which is out of step and we're right at "strip off the clothes, put on the biomed LCG's GO."

CC Okay, we're right with you on our check-list here, thank you.

PAO This is Skylab Control. Pete Conrad reporting that he is at this time coating the helmet visors with anti-fog compound and he and Joe Kerwin are preparing to put on the biomedical sensors and the liquid cooled garment. To clarify conversation between Conrad and Rusty Schweickart, a few minutes ago there is a possibility the crew will be ready and will open the hatch one sunset early. There is a possibility that hatch opening time will be moved up to 14 hours 3 minutes Greenwich mean time or 9:03 central daylight time. The regular hatch opening time is scheduled for 15:30.

CC Go ahead.

SC Okay, I just want to double check, verify Houston on SO54. I can go ahead and turn the main power switch OFF, the door will stay open, right?

CC That's affirmative.

SC Okay.

PAO Skylab Control. We're still holding with the Flight Plan time for hatch opening of 15:37 Gmt or 10:37 central daylight time, with the possibility of a hatch opening at 14:03 Gmt or 9:03 central daylight time.

CC Okay, Skylab we've got about 30 seconds left here at Honeysuckle; going to pick up Hawaii at 58.

SC Say again, Rusty.

CC Right, we've got about 10 seconds here and we're going to pick you up at Hawaii at 58.

SC See you then.

PAO This is Skylab Control at 12 hours 48 minutes Greenwich mean time. We've had loss of signal at Honeysuckle on the 344th revolution. Hawaii will acquire in about 10-1/2 minutes. Crew is in their EVA preparations at this time. Pete Conrad reporting he was coating the visors with the anti-fog compound. He and Joe Kerwin ready to don the biomedical sensors and the liquid cooled garments. Regular hatch open time for this EVA, 15 hours 37 minutes Gmt. That will be at sunset with the possibility that if the crew stays ahead of the time line on the EVA preparations and is

SL-II MC629/3
Time: 07:37 CDT, 14:12:37 GMT
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ready to go 1 revolution early or 1 sunset early we would permit them to open the hatch at 14 hours 3 minutes Greenwich mean time. Four hours scheduled for this EVA. At 12 hours 49 minutes this is Skylab Control.

END OF TAPE

SL-II MC-630/1
Time: 07:57 CDT, 14:12:57 GMT
6/7/73

PAO This is Skylab Control; 12 hours 57 minutes Greenwich mean time. We're less than a minute away from acquisition at Hawaii; we'll stand by for that pass.

CC Okay, Skylab. We got you again at Hawaii for about 10 minutes.

SC Okay.

CC Okay, Paul. You might want to expect the PRIMARY COOLANT FLOW CAUTION AND WARNING here. EGIL's going to be powering down the primary system. I beg your pardon, they'll be powering it up, which will give you a C&W there on PRIMARY COOLANT FLOW.

SC Okay.

CC And also, PJ, for you up in your area, we're going to be doing some commanding here. Specifically, we're going to enable AUTO RESET, and we'd like you to stay clear of the DAS. I don't think you have any operations there, but we'd let you know that.

SC Okay.

CC PLT, give a call when you got a second.

SC Calling Rusty.

CC Yeah, okay. We got an indication here, PJ, that the S054 main power and thermal power are still on. Is that the case up there? We're looking at page 1.2-3, where it calls for them both to be off.

SC Yeah, and I finished that (garble). Let me go double check. All right?

CC Okay. Appreciate it.

SC No, both the switches are in the OFF position.

CC Okay, stand by just 1.

CC Okay, we may have a pulser problem there or something, Paul. What we'd like you to do is go ahead and cycle them both to ON, and then both back OFF again.

SC Okay. Task complete.

CC Okay, Paul. Stand by on that. It looks like we may have a problem with the switch; we'll get back with you.

SC Right. I'm going in the workshop.

CC Okay, PLT. We're going to go ahead and command it from the ground here and see whether that gives us positive indication at all.

SC Go ahead.

END OF TAPE

SL-II MC631/1
Time: 08:06 CDT, 14:13:06 GMT
6/7/73

CC Okay, Skylab, we're about 40 seconds from LOS here at Hawaii. We'll be picking you up at Goldstone at 13:10. And Pete, the number you can stick in you bonnet for sunset there acceptable for exiting the airlock, would be 14:04. And if you want to get out a little earlier than that you can, but we'd expect you'd probably cool your heels waiting for sunrise, or you can get out up to about 10 minutes after that time. And we think you'll still have plenty of time to get everything done waiting for sunrise.

SC Okay, Rusty. I'm not sure we're going to make that one, but I think we're probably going to cool our heels an hour or so.

CC Okay, the schedule is up to you guys. We're ready to support any way you want.

SC Thank you.

CC Okay, Skylab, we've got you again over Goldstone this time for about 5-1/2 minutes.

SC Okay.

CC Okay, Skylab, we got about 20 seconds here to LOS, and we'll be picking you up at about 21 at Bermuda.

SC Roger.

PAO This is Skylab Control; 13 hours 17 minutes Greenwich mean time. LOS at Goldstone, about 3-1/2 minutes before acquisition at Bermuda. The S054 experiment, the x-ray spectographic telescope, is apparently stuck on. We varified with telemetry at Goldstone that that experiment is still operating. Switch is turned off in the spacecraft and we tried to command it off from the ground without success so far. Flight controllers will continue to work that problem. Flight director, Milt Windler, has asked for an assessment of the safety factors involved during the EVA. This is the experiment in which Joe Kerwin is scheduled to latch the door open on this telescope with the previous problem with this door being stuck. We do want to get a assessment to determine whether there may be a safety factor involved with doing the S054 door latching. We do not have an answer on that. We'll let you know as soon as we do have one. Crew continuing EVA preparations and it will be crew option as to when they open the hatch. Rusty Schweickart advised them during the Goldstone pass that they could open the hatch as early as 14 hour 4 minutes GMT. He adv'sed they might want to wait about 10 minutes after that time however so they would not have too long a time to wait in darkness prior to sunrise. Pete Conrad responded that he wasn't sure they would be ready to go at that time. He was

SL-II MC631/2
Time: 08:06 CDT, 14:13:06 GMT
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advised that the schedule is strictly up to the crew. Should be acquiring at Bermuda in about 45 seconds. We'll standby for communications there.

END OF TAPE

SL-II MC-632/1
Time: 08:20 CDT, 14:13:20 GMT
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CC Skylab, we've got you now over Bermuda. We'll have you for about the next 10 minutes here.

SC Roger, Rusty. I want to confirm that I - Another circuit breaker, which is left open it turns out, circuit breaker audio ZTU-A, - is that - I want to verify that it should be left open.

CC Okay. Stand by.

SC What I'm doing, I'm configuring the (garble) in here, and I'm hooked into that add-on connector in here. I'm on page 1.2-8.

CC Okay. Understand you're 1.2-8, and we - that's affirmative on that circuit breaker. We do want it left open. And since you're up in that area, PJ, let me ask you whether there's a possibility you've still got the POWER SYSTEM STATUS LIGHTS on, on 206.

SC I didn't know what you meant for a minute, (garble) Now I just looked at that once last night and turned them back off. They've been off since.

CC Okay. Understand you've got the POWER SYSTEM STATUS LIGHT off. And be advised that CB will stay open, Paul, until after you've got yourself plugged into the suit and everything hooked up, and then it goes closed.

SC Okay. Does that affect everybody's PCU? I guess it does, huh?

SC Let me tell you why. Because if I'm going to bounce around up here taking pictures and handling the TV, and the command module window's a fairly good place, I've been thinking of just going on a headset. It's chilly and 58 in the MDA, and as I remember, the only reason I'm on the umbilical is for cooling. I think I can hack it in the suit. Without cooling it's going to need the PCU in the umbilical, and I was going to go around on the light weight.

CC Okay. Stand by, PJ; we'll take a look at that and advise you on any configuration change you might need.

SC Okay. Meanwhile, I'm going to prep.

CC Okay.

SC Hello, Houston. You still there?

CC Yes, sir. Go ahead.

SC Okay. We just lost a DELTA-P in our condensate tank. I unhooked from the holding tank about 10 or 15 minutes ago. You got any quick good words?

CC Stand by.

CC Okay, we've got that in work. We'll get back with you, PJ.

SC Okay. I just got the CAUTION AND WARNING, and it's sitting on zero. It's 5 or 4-1/2, when I unplugged.

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CC Okay. We'll put that in the mill.
SC Okay, Houston. The status on that tank: the WATER VALVE is in FILL, the PRESS VALVE is in CLOSED, and the tank is empty.
CC Okay. Thanks. We got that.
CC Okay, PJ. We're going to be losing you here in about 10 seconds at Bermuda. We'll pick you up again at Canaries at 32. And we'll have some word for you on the comm and also the condensate tank.

END OF TAPE

CC Okay, Skylab, we've got you here at Canaries for about the next - well, we got a long one here at Canaries and Ascension for about 15 minutes.

PAO This is Skylab Control; 13 hours 34 minutes Greenwich mean time. Due to the possibility of early hatch opening, there will be no change-of-shift news conference this morning. There will be no change-of-shift news conference this morning because of the possibility of early hatch opening.

CC Skylab, how do you read? (static)

CC Skylab, Houston in the blind here. It looks like Canary's had a little trouble with their tracking antenna. We're not reading you. We should be picking up on Ascension in about another 3 or 4 minutes. We'll give you a call there.

SC We read you, Rusty. How about that?

CC Okay, yeah. The signal sync came in just that time. PJ, are you around? I've got some words for you.

SC He's donning his LCG. Have you got something for him to do? Should he stop what he's doing or what?

CC Let me - If he's listening, I can tell him about the comm thing, and then we've got a condensate tank procedure for him to run through. We think we got a leaky QD on that line.

SC He's listening; go ahead.

SC Go, Rusty.

CC Okay, PJ. I'll tell you what - it appears we've got a leaky QD on that panel 393 condensate line. And what we'd like you to do is to go ahead and remate the QD's and disconnect them again. And make sure that we've got the cap on the line there coming out of 393.

SC Houston, yeah, I'll try that. I'll go check it, and the cap is on.

CC Okay, understand the cap is on. I guess we would like you to recycle the QD there to try and seat it and reaffirm that - put the cap back on after you're done. On the comm lash-up, PJ, go ahead and use your long cable coming out of 102 and hook the light weight right into that. And after you hook it in, you can close the audio breaker on 200.

SC Okay. The audio breaker's already been closed.

CC Okay.

SC You mean the CCU breaker?

CC That's affirmative. After you get the light weight hooked up, go ahead and close the CCU breaker.

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Time: 08:33 CDT, 14:13:33 GMT
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SC Okay. Well, I've got them all hooked up. We've got three of them rigged up there; so I'll close that thing next time I go up. (squeal)
CC Okay, and from what we can see, your comm checks and all that should be completely normal in that configuration.
SC Okay.
SC (Garble) Rusty (squeal) (garble).
CC Pete, I'm sorry; we were not able to read any of that because there was a squeal.
SC Houston, Skylab.
CC Okay, we've got you at Ascension now. We had a handover from Canary to Ascension. Go ahead.
SC Roger. We have a PRIMARY COOLANT LOW CAUTION.
CC Roger. That's the one we called up before. That was expected from - stand by.
SC Okay, that's a low temp, not a low flow.
CC Roger. Understand. We're checking it. Hold on.
CC Okay, if any one is around panel 217 up there, we would like you to go SUS 1 to BYPASS on panel 217.
SC Okay, SUS 1 to BYPASS on 217. That'll be a couple of minutes. We've got to get PJ loose.
CC Okay, fine.
SC And it's important if you see any other configuration changes, have them do them now, because we're all going to be getting in or getting in suits and our LSU's in a minute.
CC Okay. Be advised as part of that condensate tank problem, we are, as well as recycling the QD's, - we are going to have to dump the condensate tank there prior to EVA. So why don't you figure on doing that, and we'll let you know if we need to do it immediately.
CC Okay, Joe, if you haven't already gotten up there, why don't you go ahead and disregard that bypass on SUS 1. We'll just turn the PRIMARY COOLANT LOOP off and handle it from here.
SC Wait a minute. Is that what you just did? We just had a warning light.
SC No, I got it up here. Now what happened - when I went to bypass there's something that started making a lot of noise around the (garble) packages, and we just got an EGA 1 warning light.
CC Okay. We read. Stand by.
SC And you want me to go back to EG - NORMAL or EGA on SUS 1, right?
CC That's correct.
SC Okay. I went back to NORMAL. That bypass sure makes a whole lot of noise. It squeals - it sounds like a

high slow squeal, you know, when it's going around, I guess. I checked the QD. I reseated it. There was no evidence of any water around the condensate tank QD. It's been reseated, and the cap's back on.

CC Okay, Paul. I understand, and we'll get with you here in just a second on whether we need to dump the condensate tank. Hold on.

SC Well, it's empty now, Rusty.

CC Okay. Understand you're saying that it is empty at this time.

SC It's empty, but there's no DELTA-P in it.

CC Okay, thanks. Stand by 1.

CC PLT, when you say it's empty, you're looking at the bladder. But could it have - be full of air? That's what we suspect down here and that we would still have to dump into the holding tank.

SC It's not going to pick up the condensates during the EVA though as long as it's disconnected, right?

CC Stand by.

SC Houston, Skylab.

CC Go ahead.

SC The PLT reports that the bladder is at the empty end of the tank. It ain't full of air.

CC Okay, understand that the bladder is on the empty end, and therefore it is not full of air.

SC That's correct.

CC Okay, we're putting that into the grist mill. Stand by.

SC Okay.

SC Okay, here's the status. I did not look at the bladder before I disconnected the holding tank. Shortly after - about 10 - 15 minutes after unhooking the holding tank, we get the DELTA-P. I looked up. It was rapidly approaching zero at the time. I looked at the tank bladder. The bladder is all the way at the empty end, and the DELTA-P reads zero.

CC Okay, we read.

SC Houston, SPT. We want to know whether to get the PLT into his suit or not. Are you going to have action for him in a few minutes, do you think?

CC Okay. I'll tell you what. We've got about 2 minutes to LOS at Ascension here, and we'll advise before that 2 minutes is up, okay?

SC Good show.

CC Okay, here's the word. We got 30 - about 40 seconds to LOS. And PJ, before you get into the suit, we would like you to do, on page 2-40 of the SWS Systems Book,

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AM condensate tank dump. You'll be dumping overboard rather than into the holding tank. We do need to get a vacuum on the condensate removal system to do that (garble) primary vent heaters are better than the secondary that are called out there. And after completing that procedure, press on with the suiting and the rest of the work.

SC Okay.

CC That's page 2-40, AM condensate tank dump.

SC Roger.

PAO This is Skylab Control; 13 hours 49 minutes Greenwich mean time. We've had loss of signal at Ascension. We'll next acquire at Carnarvon in about 22 minutes. Just before LOS, at Ascension, we passed up a procedure to put a delta pressure back into the condensate tank. This delta pressure was lost several minutes ago during the pass. You heard considerable conversation concerning it. The procedure passed up is designed to get the tank back in proper condition. And Flight Director Milt Windler has received the word that the S054 problem will not constitute a safety hazard for the crew during the EVA. I repeat, it is not a safety problem. S054 continues to operate. Crew is not able to turn it off. And we've been unsuccessful commanding it off on the ground. However, there is no safety problem involved for Joe Kerwin when he goes up, toward the end of the EVA, to pin open the hatch - the cover of that experiment. We still have no positive indication whether the crew will egress early or the Flight Plan time. That will be their option. Flight Plan time for hatch opening: 15 hours 37 minutes Greenwich mean time. However, they could emerge as early as 14 hours 4 minutes. We're about 20 minutes away from AOS at Carnarvon. We'll come back up shortly before that time. At 13 hours 51 minutes, this is Skylab Control.

END OF TAPE

SL-II MC634/1
Time: 09:08 CDT, 14:14:08 GMT
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PAO This is Skylab Control; 14 hours 8 minutes Greenwich mean time. We're just under 3 minutes away from acquisition at Carnarvon. There is a possibility that Conrad and Kerwin could have the hatch open when we acquire, or they may still be in preparations. Conrad's designation will be EV1, Kerwin, EV2, Weitz EV3. Weitz has configured his communication so that he is free to roam somewhat throughout the vehicle up to the command module for television shots out the window there. He's also expected to take television pictures out one of the STS windows, that's one of the windows in the structural transition section of the airlock module. Although it's volume is effectively that also of the multiple docking adapter. That will be Weitz's primary station during the EVA or he will be reading procedures to the crew, monitoring their systems and the controls for the airlock module are in that section. The communications configuration will be EV1 and EV2 on VOX, voice operated microphones. Weitz will have to key his microphone for the ground to hear him. Conrad and Kerwin will be able to hear him without his keying, however, we will not hear him unless he keys. We'll stand by for the Carnarvon pass. Scheduled AOS in about 30 seconds.

CC Okay, Skylab. Houston here over Carnarvon for about 8-1/2 minutes. We see DELTA-P on the condensate tank so that looks good. And for your information, we're dumping the recorder here.

CC And Skylab, Houston, if you're reading, we're seeing DELTA-P on the condensate. For your information, we're dumping the recorder.

SC Okay. We got a problem with SUS 1, Rusty. It's not running smoothly.

CC Pete, I'm sorry, I did not read that. Understood you had a problem with SUS 1. We have some good words on what we would recommend you do on that.

SC Go ahead.

CC Okay, first we'd like to have PJ verify that even though he does not plan to use cooling that he did perform the steps on 1.2-7 of the EVA checklist. That is, hooking up the jumpers and that kind of thing up there on panel 217.

SC He took the jumpers off.

CC I beg your pardon, yes, that he took them off. Okay, but he did complete the steps on 2. - 1.2-7 as listed there.

SC If his LEU is plugged into a PCU which it's plugged into 217?

CC Okay, fine, then what we recommend is down

SL-II MC034/2
Time: 09:08 CDT, 14:14:08 GMT
6/7/73

on panel 317 and 323 in the lock compartment, that we turn both SUS 1 and SUS 2 pumps to OFF. Then on panel 317 the commander switch his - in his water inputs from SUS 1 to SUS 2. In other words, from the left side to the right side of the panel. And then on 323 turn the pumps back to PRIMARY.

SC Okay. Want to run both EVA's off of SUS 2.

CC That's affirmative.

SC Okay.

CC And since SU3 2 is working with no problems we feel that that's perfectly acceptable. And PJ expressed the opinion he did not need cooling. If for whatever reason he feels he needs cooling during the EVA there in the MDA, we recommend he go ahead and plug in to SUI 1; try it out, if he gets cooling fine. We expected some heat on the loop will solve the problem but we're not sure. But he can try it and if he doesn't get cooling he may be just a little warm.

CC And Skylab, we're looking at the condensate here and you have a GO for the EVA based on the condensate. There's no problem with that.

CC Okay, Skylab, and we just went around the room a little bit here and it looks to us as though, with the reconnection you're doing now, that we're GO here for the EVA. One advisory, we do still have power on on SO54. That's no problem. We just wanted to let you know and we'll be handling it from the ground. We see no constraints on - on your operation, no association with it.

END OF TAPE

SL-II MC-033/1
Time: 09:20 CDT, 14:14:20 GMT
6/7/73

PAO This is Skylab Control; 14 hours 21 minutes Greenwich mean time. We've had loss of signal at Honeysuckle. About 5 minutes away from acquisition of signal at Guam. We'll keep the line up during this time. NASA Administrator Dr. James Fletcher, Deputy Administrator Dr. George Low, and Associate Administrator for Manned Space Flight, Dale Myers, are in the viewing room awaiting the start of this EVA. Bill Kennedy, the Skylab Program Director from NASA Headquarters, and Kenneth Kleinknecht, the Johnson Space Center Skylab Program Manager, are at the management consoles in the control room proper. And we note that backup Science Pilot, Ed Gibson, and Director of Flight Cooperations, Deke Slayton, have joined the CAP CONs at their console. Johnson's Space Center Director, Dr. Christopher C. Kraft, is also in the control room at this time.

CC Okay, Skylab. We're with you again over Guam for the next 5 or 6 minutes.

SC Okay, Rusty. Something you might be thinking about is, I had that condensate tank to vacuum for a long time, while I was getting into the suit. And the max Delta-P I ever got in it was about 1 PSI. You might be thinking of that.

CC Okay. Understand. The max you ever got there during that procedure was 1 PSI, and the only consequence of that is that the dewpoint may be raising slightly during the EVA, there in the MDA. And we see it as no sweat. No pun intended either.

SC Understand. But it must be something wrong, if I didn't get 5 PSI, instead of - if I got 1 instead of 5, seems to me.

CC That's correct and we figure on going into troubleshooting after the EVA to perch it out.

SC I'll buy that.

PAO Skylab Control. We still see 5 pounds per square inch pressure in the airlock. So obviously the hatch is not open yet. Paul Weitz will be suited during this EVA. However, his suit will not be pressurized and he will not be wearing gloves or helmet.

CC PLT, Houston.

SC The PLT is in the middle of checking out his PCU, can I take the message?

CC Okay, yeah, Joe. I better go ahead and get it up to you. We've got about 45 seconds here before LOS. And we'll be picking up Goldstone at about 50. And we've got a final configuration here on this condensate system. The problem is that the humidity may be going up fairly fast if we don't do something about it. So what we decided to do, is just leave it in a vacuum mode and open it up to VACUUM.

So what we'd like to do on 210 is take the pressure valve and go to VACUUM on it. We'd like to take the H/D valve and go to FILL. And we'd like to have the vent valve to PRIMARY, and the vent heaters on PRIMARY. And that'll just keep a vacuum on the back of the separators the whole EVA.

CC Pressure to VACUUM, H2O to FILL, vent heaters to PRIMARY, and the vent valves to PRI.

CC You got an A on that one, sir.

C That's your final word, right?

CC That is guaranteed final word.

CC Until Goldstone

CC Right. And by the way, we're set up for TV. If you get a chance and you'll probably want to switch your input switch from the ATM over to TV for us.

CC Okay.

PAO This is Skylab control; 14 hours 15 minutes Greenwich mean time. We've had loss of signal at Goldstone will acquire in 10 minutes. We've again rescheduled the housekeeping task, so that there will be no humidity problems during the EVA. As we lost signal, we were still showing pressure in the airlock. We've got about 5 minutes left in darkness in this revolution, number 345. The Apollo telescope mount television now being shown, was dumped earlier at the Texas station. At 14 hours 15 minutes this is Skylab control.

END OF TAPE

SL-1I MC630/1
Time: 09:48 CDT, 14:14:48 GMT
6/7/73

PAO This is Skylab Control at 14 hours 48 minutes Greenwich mean time. We're two minutes away from the next Skylab pass over the United States beginning at Goldstone. We are prepared to receive television during this stateside pass if the crew desires to transmit. We'll stand by now for acquisition at Goldstone.

SC - - paig. Paul, can you time us for one minute? Okay, Pete, it's going to be FLOW OFF, and then on my mark, PRESS OFF and that starts the one minute, you ready?

SC No, no, God damn.

SC What's the matter?

SC Well, just a second.

SC Oh, you lost that thing, hub.

SC Well, I had to take it [illegible] couldn't get to REG 2.

SC Oh, for Christ's sake.

SC I'm not sure this is -

SC I want to take this with me.

SC Oh, (garble).

CC Houe - Skylab this is Houston. We've got you for a long pass here over the states.

SC Okay. Let's go to - let's go flow to OFF, now.

SC Okay.

SC Let's go PRES to OFF and start your one minute count, Paul.

SC Houston, are you reading EV1 and 2.

CC Yes sir we are. We've got you loud and clear and we see you're in the integrity checks.

SC That's correct.

SC Well, I topped out at 39.

SC Okay, mark it from there. I didn't go for 3.75. So punch (garble).

SC Okay, we're holding good. At least I am.

SC One minute, it's PRESS to BOTH and then flow to IVA.

CC Okay.

SC Okay, I get no decay. PRES to BOTH!

SC Okay grunt I've got flow.

SC You too?

SC Yeah. Okay.

SC All right. How was your decay?

SC At about a half.

SC About a half. Okay, we're in spec. All right the cuff gage is stable at 363.9. MODE SELECT to ABSOLUTE. Let's depressurize. And Rusty this diverter "clot goober" is kind of a pain in the neck during checkout. I

have to partially tear it off to get at the valve.
CC Okay. You should be able to move it right through the EDD there.
SC You should, but you can't.
CC Well, okay.
SC The other thing that's in my way Rusty is I can't get into RFC 2 with these pliers on there.
CC Okay. We would recommend either a quicky other place or just forget them, Pete.
SC I think I'd like to forget them.
SC How about in here. Let me tie them on one spot on mine. (Garble) originally selected let me see if -
SC Rusty, are you reading PLT on the light wave?
CC That's affirmative. You're coming through five square, PJ.
SC Okay.
SC Hey, I was - I loose them - I loose them they're not in the way.
SC Okay.
SC Say, PJ.
SC Yeah.
SC After you get the umbilical stowed you're going to have to get SOB28 or A, bring it back there on the stretch strap and just tether it in the aft block, dig?
SC Have got to crawl over it.
SC I'll get up into the MDA for you while you do that. And Paul we're ready to go on your checklist. Our cue card is all done.
SC Okay.
SC (Garble).
SC Okay.
SC How thick are those two?
SC I don't know.
SC 13. Is mine the one you stow first?
SC Oh, yeah.
SC Okay.
SC You go up first. Think you might move up while he stows.
SC That's DELTA-P you've got on that condensate tank now.
CC Okay, we're showing about .87 on the DELTA-P and we figure you're GO either way. We think that it'll probably take a little moisture out but it may not be too efficient and we'll get with it after the EVA.
SC Okay.
SC I've got to do it. 180.

SL-II MC636/3
Time: 09:48 CDT, 14:14:48 GMT
6/7/73

SC Okay, that's not right.
SC Do 180 one more time.
SC There you go. Very good.
SC Okay, start working Joe. Okay.
SC Bill, I'm waiting for your CO to come in and close the hatch.
SC Here I am.
SC Okay.
SC In the aft lock, Pete, not behind you.
SC Yeah.
SC Keep it in here. It's okay. We've all ready it handled, Paul.
SC Well, let me see which way I can roll here.
SC Let me get another handle on your umbilical.
SC Okay.
SC All right. Let's sync umbilicals.
SC Okay that's clean.
SC The other thing is we've got to make sure that aft lock door is loggered down good. Turn out the lights.
SC Oh, yeah. Oh, I'm going to close the hatch first. I did.
PAO That's the hatch between the multiple docking adapter and the airlock module, not the outside hatch.
SC The hedge handle is open. All right. Yes. UNLOCK. CLOSE. It didn't, but I put it to LOCK. Now It is in lock now and (garble) start down, okay? In works. OFF. All right we'll work that right now. I will. I'll be standing. That's good.
SC Let me get this hatch right here. Right here.
SC Super.
SC Okay, all my umbilicals in the aft lock now, I think. What are you doing kid?
SC Well, we had to - the aft airlock hatch came loose once - just making sure the straps have got it strapped down.
SC I don't need that floating around.
SC Okay.
SC Under my right arm.
SC All right. What'd I do, another 360 again? Need 180, Paul? Is that what I need to do?
SC Yeah, you're in good shape now that's exactly right, Pete.
SC What now?
SC One thing that's got to go back there is 82B - 82A, (keep getting it screwed up.)

SL-II MC636/4
Time: 09:48 CDT, 14:14:48 GMT
6/7/73

SC (Garble)
SC Looks fine, but it is fine.
SC All right, Pete can you speak for us here with 82A?
SC Think you can.
SC Let me try this right here. That's about as close to the floor as I can get.
SC Yeah, that's plenty. I'm half behind you and he's got a good half of the hatch open.
SC Okay. Houston, do you read?
SC Yeah, sure.
SC Tie it fairly close to the thing though. Don't want to move it around too much. Guess, Houston, how many minutes to sunset?
CC Okay, Pete, we're about 35-1/2 minutes from sunset. We see some power - rather high power usage down in the OWS. Can you verify that you turned all the lights off down there?
SC Yes, all the switches were off panel 617 or whatever it is and the entry lights are off.
CC Okay, and do - -
SC Actually, I can't verify that visually right now, Rusty.
CC Okay, and can you verify having turned off the VCS duct fans?
SC No. Paul says he did not turn out the VCS duct fans. Do you want them off?
CC Yeah.
SC You can -
CC Stand by just one
SC You go down there and get them. That's all right, we got time.
SC I'll hang on to that, Paul, I've got it.
CC Okay. Disregard that. Do not go back down into the OWS -
SC Paul is standing by to do so if you want him to.
SC We've got time, Houston.
CC Okay if Paul can get past you there and get the aft hatch open and get down and shut off the fans and verify the lights.
SC Verify the lights. Okay he's on his way.
CC Okay, fine..
SC Like the pressure in here now?

SL-II MC636/5
Time: 09:48 CDT, 14:14:48 GMT
6/7/13

CC Okay, Paul, if you read down there -
SC Paul doesn't read you yet. He's waiting for pressure to equalize across that hedge.
CC Okay, fine. Perhaps you can relay to him when he gets down there that we want the panel 614 circuit breaker, TCS duct 2 and 3 fans - 2 of them OPEN.
SC Paul says that the pressure is higher in the workshop side of the hedge. That's kind of screwy, Rusty. Why is that?
CC Stand by. That does sound -
SC Or is it a discrepancy in our gages?
CC Joe, does Paul have the EVA checklist in his hands?
SC No.
CC Okay, when he gets down there I'm prepared to read the particular steps that we think were omitted here. So will he be able to hear me on a SIA down there?
SC I expect so.
SC Still equalizing.
SC He still hears the pressure equalizing through the valve.
SC Still equalizing?
SC Still equalizing?
CC Okay, we're reading 2/10 of a psi DELTA-P with the lock slightly higher. He's probably hearing it go the other way.
SC The lock is higher.
SC No, this way.
SC They say the lock is higher.
SC Well, he can find out in a minute when he opens the hatch, which he is about to do. (Laughter) We got a little rapid DELTA-P there.
CC Okay, understand you got the hatch open.
SC Yeah, the hatch is open. He's going to go shut off the warning com.
CC Did he run a Navy catapult down into the experiment compartment?

END OF TAPE

SL-II MC637/1
Time: 10:04 CDT, 14:15:06 GMT
6/7/73

SC (Laughter) We got a little rapid DELTA P there.
CC Okay. Understand you got the hatch open.
SC Yeah, the hatch is open. He's going to go shut off the - the warning call.
CC Did he run a Navy catapult down into the experiment compartment.
SC It's still in the airlock, Rusty.
SC Yes, the hatch did not blow open. You'll have to ask him which way the DELTA P was, I couldn't tell by looking.
CC Okay. We were just worried about a swing shot there.
SC Yeah.
SC No, it just popped about a half an inch.
CC Okay. Let me know when he gets down there and I'll read these items to him.
SC Rusty, I'm not going to hear you down there. What do you want me to do?
CC Okay, here you go, Paul. On 614, circuit breakers TCS duct 2 and 3 fans, 8 of them OPEN.
SC Okay.
CC and also the CB HSS bus 1 wardroom water heater, OPEN.
SC Okay.
CC And then on 613, CB lighting; 42 of them OPEN.
SC Holy mackerel. All right.
CC Okay.
SC When I drop down to track in the checklist, you'd better (garble) in it.
CC Okay.
SC No, I remember them talking about it last night, and what they were going to power down, but I don't --
CC -- It never came up on paper.
SC I didn't read that part in the paper.
SC Not that it wasn't there.
SC Paul said you were right, it was slightly higher in the airlock.
SC The pressure that is.
CC Okay.
CC Okay, and for your information, we still have 30 minutes to sunset, so there's no sweat.
SC Yeah.
SC Okay.

SC We're - we're taking our time. We got all day.
CC How's the cooling feel, by the way?
SC Fine, two of us on --
SC Lucky we're smart enough to on SUS 2 at the start.
SC What do you think happened to 1? Did it freeze up?
CC We're not really sure. We think it probably needs a little bit of heat in the loop before we turn it on but we've got a little procedure here for PJ in case he wants some cooling.
SC He might want some cooling. It's pretty warm with that suit on.
CC Roger. And we've got a procedure for him. And we'll read that to him - in fact let us know - probably we'll do it over Ascension. Everything should be pretty well organized by that time. We're 1 minute until LOS at this point, and we're going to pick up Ascension at 17.
SC Okay, he's turning everything out down there right now. I can see down there.
CC Okay, fine.
SC Okay, I got DUCT 2, DUCT 3, the wardroom water heater and I didn't count them, but I got all the light circuit breakers I could see.
CC Okay. Can't ask for more than that. Thanks a lot.
SC Of course, now that they're all open and can't see. Now the emergency light is still on. Get that up here.
CC That's affirmative.
SC Up here and down there, Pete, it looks like over to me.
SC Right now it looks to me like I'm looking down. (laughter) That's cause Pete is looking over - -
SC Good old imagination; it certainly becomes hook.
SC Besides that, he's climbing. (garble)
CC We got some people at Pensacola very interested in that, Pete.
SC Well, up and down is strictly a matter of how you want to do it. Every night the world goes by so that you lay in the wardroom ceiling to get the world right side up and when you come back in from looking at the world right side up, - -

SL-II MC637/3
Time: 10:06 CDT, 14:15:06 GMT
6/7/73

SC You got a wardroom table growing --
SC You've got a wardroom table growing out of the ceiling (static)
CC We'll pick up the continuing side of and up - of up and down at Ascension here in a few minutes.
PAO This is Skylab Control; 15 hours 9 minutes. We've had loss of signal at Bermuda. We'll pick up Ascension in about 7-1/2 minutes. Paul Weitz going back into the orbital workshop along toward the end of this last pass to turn off some lights and some fans and the wardroom water heater. This will conserve 200 watts of power during the EVA. Still have about 26-1/2 minutes of daylight remaining. Skylab now in revolution 346. We'll come back up a few minutes prior to acquisition at Ascension. At 15 hours 10 minutes, Greenwich mean time, this is Skylab Control.

END OF TAPE

SL-II MC-638/1
Time: 10:15 CDT, 14:15:15 GMT
6/7/73

PAO This is Skylab Control; 15 hours 15 minutes Greenwich mean time. Two minutes away from acquisition at Ascension Island. Flight Director Milton Windler will be going around the Control Room getting a GO for hatch opening after we acquire at Ascension.

SC All right. Now I depress how far?

SC All the - Okay.

CC Okay. Skylab, Houston. We've got you for about 5-1/2 minutes here over Ascension.

SC Okay, Houston. The lock's on the way down, 4.2 and dropping.

CC Roger. Understand.

SC Okay. My suit's hanging right in there at 385.

SC It's eh - 375's what I've got.

SC There'll be some difference there (garble).

SC Houston, PLT. You might take a reading on the MDA pressure, just for information, so you can check the crew. They indicated it got up to about 53 to 54 in here before we went DEPRESS.

CC Okay. We got it.

SC There's 2 in the lock, 385 on my suit.

SC Okay.

CC Okay. And Houston here. You're GO for a hatch open anytime you get it down there. Systems are all looking good.

SC - - the Hell did all this junk come from?

SC Okay.

SC I've got the TV on. You got TV, Houston?

SC Houston, you may be interested in knowing that on the lock DUMP VALVE, a large block of ice is growing, on the screen.

SC (Garble) is?

SC Yeah.

SC I couldn't figure out what it was.

CC That on the inside, Pete, or on the outside?

SC On the inside.

SC Must have been enough moisture in the air, Rusty, that as it hit the screen, why - must have been super cooled; it froze. And it's a rather weird looking fellow. That's what's making the lock take so long to dump down. I'd say it cuts the - -

SC Did you scrape at it with your finger?

SC No, it's a solid block. I guess I can. Well, I don't want to.

SC I'm sure that helped (garble)

SC All - all - all - All I did was block it more. I better leave well enough alone.

SL-II MC-638/2
Time: 10:15 CDT, 14:15:15 GMT
6/7/73

CC How about breathing on it?
SC Wel., I thought about that, but - -
SC Yeah, I'm showing 0.8 also.
SC It's blocked about two-thirds of the screen.
CC Okay. You've got a nice tool in there called a pry bar you might want to poke at it with if it does block it completely.
SC (Garble) it's star - it's started making ice - -
SC It's in the pores of the screen, Rusty. We'd have to break the screen in order to get it off.
SC I don't want to do that. There's debris there and everything.
SC Leave well enough alone.
SC Okay.
CC And, PJ, if you've got a minute there, while they're going down, sometime on panel 203, we'd like to turn the ATM coolant loops - loop pumps - all three of them off. Like to have you verify that.
SC You know what's happened here. Our (garble) is equal to what it'll take out now. It's holding about 1/2 psi.
CC Okay. We're reading that, Pete.
SC (Garble).
SC You think we dare open the hatch at 1/2 psi?
SC No.
SC I hate to tear into my pry bar, Rusty. I'm looking around for somthing else that I might use. My pry bar is neatly packaged.
SC The only thing I can give you is the brace - -
SC I got - I got something here.
SC (Garble)
SC You want to tickle it with the handle? Oh, all right.
SC Something skinny to stick down in between the mesh.
SC Okay, that's ah -
SC Getting something?
SC I got some of it.
SC What?
SC Okay. Yeah.
SC Are we over Houston?
CC Yes, go ahead, Pete.
SC Did you read that, Houston?
SC What's your last?

SL-II MC-638/3
Time: 10:15 CDT, 14:15:15 GMT
6/7/73

SC Paul - Paul left the procedures (not that we need them) down in the wardroom, neatly in his locker. How about uplinking your TV procedures next station?
CC Okay. We'll do that.
SC You can wait most of it. We've got it pretty well committed to memory.
CC Okay. We'll get the two messages up.
SC All right. Now we look like we're about 0.2. What do you read, PJ?
CC Okay. 0.3 is okay for opening the hatch, Pete.
SC All right. Go.
CC Well, well done.
SC There goes the hatch. I'm gonna - -
SC Go ahead on the procedures, PJ.
CC Okay. We've got 20 seconds to LOS, and we'll pick you up over Carnarvon at 47.
SC Okay.
SC Okay.
SC I'm there.
SC I'm reading about 35.
SC I'm just going. I have to take that silly thing off and put it on again every time I move that. It's okay, and I'm reading 3.45.
SC It's in both.
SC EVA norm on the full?
SC I got good pressure (garble) off.
PAO This is Skylab Control; 15 hours 24 minutes Greenwich mean time.
SC It missed (static, garble).
SC I hope it doesn't (garble).
SC No. (static)
PAO This is Skylab Control: 15 hours 25 minutes Greenwich mean time.- -
SC (Garble) (static)
PAO We had a late LOS at Ascension. We do finally have LOS there. Next acquisition at Carnarvon in 22-1/2 minutes. There's about 11 minutes of daylight left. Crew was opening the hatch, opening the airlock hatch as we lost them at Ascension. There are lights in the fixed airlock shroud area. So the, will be able to continue the work of assembling the tools in that area and moving up to the discone antenna area, upon on the edge of the MDA, directly over the solar array wing. We would not expect them, however, to go down to the beam area, the beam wing area, during the darkness. There are no lights in that area. Copied the hatch opening time as 15 hours 23 minutes 20 seconds Greenwich mean time. At 15 hours 27 minutes, this is Skylab Control.

END OF TAPE

SL-II MC639/1
Time: 10:42 CDT, 14:15:42 GMT
6/7/73

PAO This is Skylab Control; 15 hours 43 minutes Greenwich mean time. We're about 5 minutes away from acquisition at Carnarvon and we've about 30 minutes of darkness remaining for Skylab. The block of ice that formed on the dump valve screen on the hatch is expected to dissipate prior to the end of the EVA. And it's not anticipated that it will cause any problem for the crew. During this Carnarvon pass we will probably also pass up a procedure to Paul Weitz. You've heard considerable discussion about his SUS loop, that's the suit unbilical system loop. Temperature in that system is a little bit low to permit it to operate properly. We'll pass up a procedure to - to bring up the temperature so that he can utilize that system for cooling if he needs it. We won't know where the crew is in their EVA procedures until we have acquisition. Procedures do call for Pete Conrad to get out of the hatch first, get himself in the foot restraints in the shroud area. Then Joe Kerwin is to pass out the beam extension tether which Conrad will stow on a handrail in the shroud area. Then Joe Kerwin will pass out the sections for the handle to the cable cutter. These are the same rods that Paul Weitz used during the standup EVA shortly after this crew rendezvoused with Skylab. The cable cutter pole will be approximately 25 feet long. Will be assembled by Conrad. Kerwin will then move from the shroud area up to the base of the discone antenna using handrails and the Apollo telescope mount truss to work his way up to this area, tether himself to the base of the antenna, Conrad will pass the cable cutters to him and then traverse up into the same area bringing the beam extension tether with him. This beam extension tether or BET as you will hear it called, is about 34 feet long, not counting the hooks on each end. It's a quarter inch diameter rope made of synthetic fibers. Very tough, very strong; will not stretch. They're expected to wait in this area for daylight prior to attaching the cutters to the aluminum strap on the solar assembly wing beam that they want to cut. And the cutter poles will be used as a handrail for Pete Conrad to work his way down to the beam area. We're about 30 seconds away from acquisition, and we'll stand by for the first conversation.

SC Out here, you can see it's got that discone tray on it still.

SC He way up over.

SC Hey, I see it.

SC How far around can you see?

SC I can see most of the discone tray. I can't see the surface. And I can't see the discone itself, it's too dark.

SL-11 MC639/2
Time: 10:42 CDT, 14:15:42 GMT
6/7/73

SC I'm looking for the other discone. I wonder where the hell that is. It's down here.
SC Where the hell's the world anyway?
CC Houston, we're right here. We're listening loud and clear.
SC Oh, I didn't mean the world world, I meant the clouds and Earth and sea world underneath.
CC Okay, would you like a little status.
CC Yes,sir, we would like a status.
SC We have 5 poles rigged swinging on the hook. And we're just intrepidly peering around out here deciding how far around Joe can get, in the dark. We have not pulled umbilicals out. We're just cooling it. Now, the pole assembly went super slick. We had a little - I had a little juggling problem getting the last longie with the tool on because I did it surprisingly enough by having Joe hold on it in the airlock. We had it all the way in the airlock and I found a way to snudge the pole out next to the solar panel over to the ATM sun inside and just line her up that way and pop her on. And as would be at zero G you know those nuts do funny things. Most of them we had checked them last night. We had backed off most of the locking nuts but as you can guess that's what we did with them is back them off. They went and unbacked too tight, so we had to mess with those a little bit but she's all rigged and ready to go hanging on the hook here. Also, let me tell you the status to the outside. I have pulled the boom launch locks on both booms, CC and CS. I have installed the CS hook and we have loaded S082A into the first station receptical and we're just standing by right now.
CC Okay. Is that the receptical in the SAS, Peter? The one in the lock compartment.
SC It's no - the receptical's in the SAS. It's stowed in the SAS right now.
CC Okay, you got a lot of time.
SC We're all configure to - to load it.
CC Okay.
SC I wanted to go load it and Pete wouldn't let me.
SC Yeah, Joe wanted to go load it, but I decided we'd get off the checklist and we'd get all wrapped around the - 're doing that, and the primary thing is to get this S. anel out. So we're resting hanging outside. I'm enjoying a lovely look at the Moon.
CC Yeah, that (garble)
SC (Multiple speakers)

SC See --
SC Well --
SC Go ahead, Paul.
SC Yeah, I'm ready to start working on getting some cooling water, if you think you got a way.
CC Okay, PJ, we do have a way to do that for you. Are you ready to copy?
SC No, I'm not. Can you just tell me?
CC Yeah, okay, forget that. Are you ready to listen?
SC Yeah.
CC All right.
SC I want to tell you something. First off I can't get the SUS 2. If this includes the SUS 2, I can't reach them.
CC Okay, we are not interested in having you get the SUS 2. We'll be using SUS 1. What we'd like to do is confirm that - what you're going to be doing. You've got the composite disconnect hooked up to your PCU and that you'll be plugging in and out of the PCU with the suit. That is, you'll break that connection rather than than the composite.
SC That's affirmative. That's what I've been doing so far this morning. And I've - Let me tell you I've been running this secondary pump for about 20 or 30 minutes, and I been plugged into it for about 10 minutes so far, and that's the status.
CC Okay, so I understand you are flowing right now on secondary pump in SUS 1. Is that correct?
SC I don't know if I'm flowing or not. If it's flowing, it's not cold.
SC Hey, PJ.
CC Okay. PJ are you in BYPASS or EVA on the flow?
SC I left it in EVA for your last instruction.
CC Okay, fine. And if you are - If you feel that the flow is warm now, the next thing we recommend is going over to panel 203. Going PRIMARY COOLANT LOOP to INVERTER 1, and PRIMARY COOLANT LOOP to PUMP A.
SC Okay. Can you tell if the pumps are ruaning down there?
CC Yes, sir, we can confirm that when you turn tuem on.
SC No, I'm talking about this SUS pump. Can you determine if SUS 1 secondary pump is running?
CC Stand by.
SC Hey, PJ, why don't you kill some of the lights to save power?

SC We're all done working.
SC Oh, that's okay. Turn them all out.
CC Okay, PJ, we cannot because of the possible instrumentation problem, we cannot confirm flow or DELTA-P on secondary pump. What we recommend is going ahead and switching SUS 1 pump to primary and - and see if you sense any difference there. And when you get the primary running, or if - if you feel the secondary pump is running, then go ahead and activate the coolant loop when the flow gets warm for you.
SC Okay. Watch the timer then, I'm going to switch it now.
CC Okay.
SC Oh, there's the Earth. How about that?
SC You found the Earth?
SC Yes, with the lights out, it's lovely.
SC What part of the world are we over?
CC You're over Western Australia, sir.
SC Western Australia. I see some large lights out to my left, and if we're actually over Western Australia and I'm looking eastward -
CC No.
SC Okay, primary SUS 1 pump is ON. Can you see it? The thing that bothers me, Rusty, is when I turn that pump on I don't get a caution and warning.
SC Want to look out, Joe?
SC Yeah, I'm looking out behind you. It's okay.
SC Look, there's a half a moon - -
SC You can see the lights, you can see the moon light on the clouds.
SC Oh, I can see the city.
SC Yeah, from horizon to horizon.
CC Hey, can you guys wait a minute so we can get a word to Paul.
SC Yeah, go ahead.
CC Okay, Paul we would like you to go to BYPASS on the flow there on the heat exchanger first if you have not already done that, before you activate the coolant loop.
SC Okay, will do when I get the primary pump ON. Did you copy my thing about no caution and warning?
CC Understand you got no caution and warning on it.
SC Yeah, either one. On SUS 1, when you turn on either the primary pump or the secondary pump we don't get the EVA 1 whine. And I want primary pump now; I have not activated the primary loop and I'm going to BYPASS now.

CC Okay, and let us know about the noise and also let us know whether you feel any sensation of cooling.
CC And Pete, for you, let me ask whether the docking lights appear to light up the discone so you can go on up there or not?
SC Well, I never got around that far. I can't really tell.
SC The flood.
SC Oh, who turned on the flood - traction light? Turn that off.
SC You go take another look?
SC Well, I can skinny around here if you'd like to see the other side, Paul.
SC Just a second.
CC Pete, as a reminder here, on your next station you going to want to pull 55 feet of EV 1 umbilical - and put it behind you in the PAS. And then before Joe comes out he wants to pull out into the air - into the lock compartment 35 feet of his umbilical.
SC Yeah, we understand.
SC I can see the - I can see the discone [illegible] here perfectly.
SC Which one?
SC Mine, the one of interest. The one - -
SC Where are you?
SC I'm up here --
SC -- around the corner.
CC I see.
SC And the green docking light illuminates the area fairly well. I think we can get started.
SC Okay.
CC (garble) lights it up well. You can turn - PJ can turn off the other docking light and that'll save us some power.
SC I don't understand.
CC Okay, Pete you got two circuit breakers over on panel 202, the left hand and next to bottom row, and I'm not sure which one turns off the green and which one turns off the red --
SC That doesn't cut it.
CC -- and Joe can give you the answer.
SC Okay. All right, give me a holler, Joe. I'm turning them off one at a time. Tell me when you want.
SC Okay.
SC That's okay, leave the other one on.
SC No. That one. No, that's right. (laughter) Okay.

SL-II MC639/6
Time: 10:42 CDT, 14:15:42 GMT
6/5173

SC Pete, I guess I'll get your umbilical out.
SC All right.
CC Okay, and troops we got about 45 seconds to LOS at Carnarvon. We're going to be picking up Guam at 16:01 here which is just a couple of minutes. And I figure you're going to press on up to the discone at this time. And PJ, how's the cooling?
SC There is none, Rusty, yet. And when is the first station with TV.
CC Okay, that's going to be Goldstone. It'll be coming up at 16:27, so we'll let you know that at Guam.
SC All right, tell me where it's going.
CC It's going behind you.
SC Okay.
SC Here comes the big snake man.
CC And Pete, you got about 14 minutes before sunrise, so you got lots of time there.
SC How far have you got to now?
SC 40.
SC (garble)
SC (laughter)
SC Holy Christmas.
SC 45, where's it all going? 50.
SC Gee, I wonder if there's anything it can hang up on down there?
SC 55, (garble) for you, if there is.
SC (static)
PAO Skylab Control; 15 hours 59 minutes. We've had LOS at Carnarvon. Two minutes away from acquisition of signal at Guam. Pete Conrad reported the assembly of the cable cutter pole went super slick. He's out in the shroud area and the foot restraints. It appeared that Joe Kerwin was standing in that hatch, still in the hatch area where he can pull out the umbilical from the airlock which he's doing now. Fifty-five feet of Conrad's umbilical, 35 feet of his own.

END OF TAPE

PAO - - which he's doing now - 55 feet of Conrad's umbilical, 35 feet of his own. Obviously, they were enjoying watching the world go by. Pete Conrad mentioned he was also enjoying a lovely look at the Moon and the stars and could see lights of cities as they passed over western Australia. In fact, they chatted so much between them that Rusty Schweickart had to break in so that he could continue some procedures to Paul Weitz to fix up his umbilical. Twelve minutes remaining in darkness and about 30 seconds away from acquisition at Guam. We'll stand by.

SC Now I just hope that by screwing around, we haven't made a loop where there was none before. (Garble)

SC (Garble) there was an apparent loop.

SC Huh?

SC Is this mine?

SC Yes.

SC Trying to figure out where it goes.

SC It goes (garble) round to your back and in the (garble).

SC Go.

SC Here.

SC Yes. That's the next end of it.

SC Right here. Let me get it down.

SC Got it?

CC [illegible]y, Skylab. This is Houston again. Over Guam for about 8-1/2 minutes.

SC Okay. Roger.

SC Hey, you're going to get worn out doing the things that require you to get there.

SC Do it.

SC Well, that's a big snarl down there. Hope it all comes out right.

SC Now I suggest you take that loop in your hand and put it up over your head.

SC Nope.

SC How did we do that?

SC Well -

SC Huh?

SC I'm just checking it. Okay.

SC You all right?

SC Yeah. And it all goes behind.

SC You got your's?

SC Mine's in reasonable shape, I think. It's all behind me.

SC Okay.

SC See how it strings out right now.

CC Pete, just for information, we do have you for about 8 minutes here. And we've got the procedures in case you want anything on them.
SC Okay. Aren't you going to up-link them?
CC Yes, sir, we are. And I'll give you an estimate on when they're going to be up there.
SC Okay.
SC Okay, Rusty. No joy on the cooling yet.
CC Okay, Joe, Paul. The question is have you activated the PRIMARY COOLANT LOOP on panel 203?
SC Rog, man.
SC Hey, Joe. I think you want to go to (garble) left.
SC I'm deciding where the best handles are right now.
SC You want to go to 1-pump Alfa, right?
SC Right. We want PRIMARY COOLANT LOOP to INVERTER 1, and we want PRIMARY COOLANT LOOP PUMPS-A ON.
SC All right
SC All right, yes. (Garble) fragile handles here; they're beautiful.
SC Rusty must have known about them.
SC He didn't tell us.
SC I hear a CAUTION AND WARNING, Paul?
CC All right, Joe. Are you going through the trusses or up over the top? You should be going through - -
SC Through, through. I'm right on the MDA surface.
CC Okay.
SC I'm looking at Paul through the window right now. The other window, Paul. Hi there.
SC That's correct, isn't it, Rusty?
CC Yes. We should be right down. And the nicest path we found was right along the mol sieve vent duct. There's about 6 inches of diameter with a silver (garble) --
SC Told you, I'm hanging onto a blue hand-rail that's just forward to that.
CC Okay. Fine. We didn't bang - -
SC I've got one hand on the handrail, one hand on the vent duct, and I'm looking at the discone antenna.
SC Did you see the pin?
SC (Garble) you. No, it's too dark at the base. The base of the antenna is pretty dark.

CC Okay, Joe - -
SC Paul. Paul.
CC The next thing you'll be doing when you get enough light is to go up and hook your chest tether into the pin at the base. And then retreat backward, behind you there, to the A-frame.
SC Understand. And, Pete, I think I'll delay that until sunrise. So I can - -
SC All right. Just a minute.
SC -- surely see what I'm doing.
SC Just a minute.
CC Okay. And for your information you've got 7 minutes to sunrise.
SC Just a minute. Paul, why don't you shine your flashlight out the window? You can illuminate the pin in the lower end of the discone.
SC You should have a pin light in your suit. I put it in.
SC Our friend, Scorpio, is right smack on top of us.
SC In a big bowl of milk. Go ahead and try it.
SC I'm afraid - It's shining at the base of the antenna, but --
SC Move to the right just a little.
SC It's not good enough, Pete.
SC All right.
SC If I try to go out there, I'll block his light.
SC Understand. Just cool it.
CC Pete, how's the rest of the lighting down there in the SAS and down the EV trail?
SC Oh, we've got all the rest of the lights out, and all - Oh, that's fine out there. Yeah, you can (garble) broad daylight. We've got all the lights out except the lock. Lights are on in the lock, and that's it. And that one docking light.
CC Okay.
SC (Garble) do you have us over now?
SC (Garble)
SC Flying over some really well lit island. Must be Guam.
CC Yeah, you're almost directly over Guam.
SC Yeah.
SC Hi there, Guam.
SC Hi there.
SC Hi, Guam. I'm looking the other way.

SC Getting wild. Don't get (garble) up.
SC Oh, hey, Houston - -
CC Go ahead.
SC (Garble).
CC Say again, Paul.
SC I say for your information (garble) - -
SC All right, I'll close my eyes, Pete.
SC No, I said don't get (garble), that's all.
SC I'm just laying here sight seeing.
SC I can see your feet.
SC Yeah.
SC For information, I'm getting counts on the PMEC, if that helps your insight for the problem any.
SC Oh, that's funny. I don't think so, but I'm not sure. It has its own high voltage power supply.
SC Hello, Houston. Did you copy?
CC Go ahead; say it again.
SC I say on the X-ray SPECT PMEC, I'm getting counts on it, for what that's worth. You'll be tracing down your indications of main power still being on.
SC I'm looking at the ground.
CC Okay, fine. Thank you very much. Hey, PJ. We're recommending - Which pump are you on? Whichever one you're on, we'd recommend you to try to switch to the other one. See if that gives you any cooling.
SC Okay. I'm on the primary. I'll go back and try the secondary. I don't have any confidence that either pump is running.
CC Okay. We'd like you to check the circuit breakers. And stand by; I believe it's panel 202.
SC We've already found them, Rusty. They're all closed.
CC Okay. Understand. All the breakers are closed.
SC Yeah. All the SUS pump breakers are closed.
SC Hey, this is the story of this bird. Half of every piece of normal gear doesn't run right.
SC A pretty wonderful machine for all that.
SC You betcha.
SC That's what we're here to find out.
CC Okay, Pete, you've got about 3-1/2 minutes here of night remaining. And at that point, you should be able to press on, and Paul can turn out the other docking light to save us that before sunrise.
SC Can probably turn it out now.
SC Care to (garble), Joe?

SC No, no, I like it out. It'll make the sunrise better.
SC Look at that sky.
CC And, Paul, if you're able, since you're not getting any cooling, we would like to have you turn OFF the PRIMARY COOLANT LOOP again. And I think we'd like to have you go back to command.
SC You want me to go OFF and then command. Is that right?
CC That's affirmative.
SC Okay. Let me give it a couple of minutes now.
SC Hi, Joe. Here comes the sunrise.
SC That's the blackest black in the universe up there.
SC Huh?
CC Okay. We'd also like to check to make sure that you've got your visors down for that.
SC Got the visors down, man. We're ready.
SC Standing in the path, I'm going to see sunrise upside down.
SC I can see it right side up on my end.
CC Okay. We've got about a minute to LOS here at Guam. And we'll be picking up Goldstone, and we wanted the TV ready at 27.
SC I can see the limb breaking in a big, big crescent, about 180 degrees.
SC That's terrific, isn't it?
SC That star's blinking through the bottom of it, like you've noticed before.
CC And for your - -

END OF TAPE

SL-1I MC641/1
Time: 11:11 CDT, 14:16:11 GMT
5/7/73

CC And for your information, we will have the pads going up as soon as we get Goldstone AOS at 16:27.
SC Roger that. Okay. Thank you.
SC Still there, Rusty?
CC Yes, we are.
SC SO82 went in there just out of sight. It's so much simpler than the water tank, it's unbelievable.
CC Ah, roger. That's good news.
SC Oh, it's just old fascination. It works just fine. And I will probably configure it for our next EVA before I come back in.
CC Okay, that sounds swinging.
SC I'm going to check out all the booms and everything else. I figured you guys might have something else up your sleeve; so I'm trying to stay in front of you.
CC Sometimes that's hard to go since we don't know which direction we're moving.
SC That's all right. We're covering that (garble) (static)
PAO This is Skylab Control; 16 hours 12 minutes Greenwich mean time. We've had loss of signal at Guam. Sunrise just breaking at 135 - Pete Conrad reporting he was seeing the sunrise upside down. Crew decided that they would wait until daylight before moving out to the base of the discone antenna. They could not see the pin at the base to which Joe Kerwin was to attach his chest tether. Paul Weitz shined his flashlight out the window in the multiple docking adapter toward the base of the antenna, but there wasn't quite enough light. When Kerwin reaches that point, Conrad will hand him the cable cutter pole and then move up to that area to join him. A few feet behind the antenna base is a cross member between two two of the trusses for the AIM, which forms an A-frame. The pole will be tethered to that area, and then Joe Kerwin will attempt to attach the jaws of the cutter to the aluminum strap that we believe is holding the solar array wing down and keeping it from deploying. This first bite into the strap is merely to secure the pole so that it may act as a hand rail for Pete Conrad to work his way, hand over hand, down to that area, deploying the BRT, the tether rope, as he goes. He will attach a tether on his wrist to the pole before he goes down to that area. When he reaches the beam, he will hook the BRT into a vent module on the beam. At that end of the BRT is a halter-like device with two hooks on the end. He will hook both those hooks into the vent module, and Joe Kerwin will take up the slack. Then Conrad will transfer his tether over to the BRT and essentially set up on top of the beam, while he positions the cutters in

the best location for attempting to cut the aluminum strap, which is, we estimate, about 1-1/2 by 3/4 inches, and it is 63-thousandths of an inch thick, made of 7075 aluminum. Joe Kerwin will pull a rope from his position, and he may be hanging over the edge of the workshop - hanging by his toes, essentially, to get himself in a better position to apply some pressure on the rope, attempt to cut the strap. If the cutters do not work, Pete Conrad has with him a pry bar which he will try next to pry the strap loose, and he has a surgical bone saw with which to attempt to cut the strap, if the pry bar does not work. All three of these methods of freeing the strap have worked in the water immersion facility at the Marshall Space Flight Center. Once the strap is free, Conrad will put the beam extension tether over his shoulder while he's in a squatting position, back just inboard from the hinge of the wing, and then stand up. This is expected to deploy the wing. There - the automatic device to employ the wing we can call the damping actuator. It contains a spring, but it also contains oil. This oil is thought to be frozen, and therefore it's not expected that the automatic opening actuator will work. But it's believed that Conrad can apply enough pressure against the BET to break the bracket that's holding the actuator, thereby freeing the wing. He will move back toward the discone antenna area as the wing erects. We're 7-1/2 minutes away from acquisition at Goldstone. We have 51 minutes of daylight remaining. As you noted on the Guam pass, Pete Conrad was able to see the Island of Guam as they passed over, still in darkness. He gave them a friendly greeting of "Hi there" and then acted the role of Guam to return his greeting. We'll come back up a couple of minutes prior to acquisition at Goldstone. At 16 hours 20 minutes GMT, this is Skylab Control.

END OF TAPE

SL-II MC-642/1
Time: 11:25 CDT, 14:16:25 GMT
6/7/73

PAO This is Skylab Control; 16 hours 25 minutes Greenwich mean time. We're 2 minutes away from acquisition at Goldstone. We will have television capability during this stateside pass. It will be Paul Weitz's option whether we get television. But we are ready to receive. Got about 45 minutes of daylight remaining in this pass. We'll stand by for first acquisition with the crew.

SC Yeah, it's sticking out, isn't it?

SC Isn't it though.

SC I can see it, too.

SC Let me kind of stand back here and see if I can work that way. Yes, there is clearance. That's the way I remembered it.

SC Yeah, darn, there's a lot of solar panels further down though, isn't there?

SC Oh, yeah.

SC (Garble) solar panel further down though, isn't there?

SC Oh, yeah.

SC You're in good shape there, Joe. Can you pull your feet --

PAO Television coming in now.

SC No, I don't want to pull my feet down. I'm all right.

SC Okay.

CC Skylab, Houston. We've got you for about 17 minutes coming over the States.

SC Now let me tell him what's going on, damn it.

SC Let me direct you, Joe. You can pull the pole back.

SC I can't pull it back some. I can't get over, you know.

SC We're out there.

SC Wait a minute.

SC Hey, that's a beautiful place to cut it. Right? See?

SC Yes.

SC Yeah, you're in the right area if you could get through those wires. Just take your time. Okay, Houston. We're out there. We have the debris in sight. There looks like enough room to get the cutter, and I'm trying to help Joe stabilize. And, Joe, you're way past it, it looks like.

SC I don't think I am.

SC Yes, you are. Come - come towards me.

SC I'm not past it.

SC Now you've got - if you're going to hook it down there, you are.
SC Well, you know what I'm going to have to do that. Wait a minute. I might get enough out of it there. See, I've got it tethered, and that prevents me from pulling it back too damn far.
SC All right, you need to move the tether up.
SC Wait a minute.
SC You're still in front of it. I mean it's down minus-X.
SC Okay. Yeah, you're right.
SC I'll tell you when you're on it.
SC Houston, I'm going to try to get to the command module with the TV and - so you can get a look at the sail.
SC All right. Now wait --
CC We've got a way to get you some comm here, PJ. I mean pulling.
SC Joe?
SC Yeah?
SC You're battling the tether. (Garble)
SC I know I am. I'm going to (garble).
SC Let's come back in here. Let's come back in here. Just take it easy, and let me help you.
SC You're going to have to untether it, Pete.
SC Now that's my - tethered around my feet. Right?
SC Yeah.
SC I got to turn around.
SC Okay, now it's loose.
SC Where's my tether?
SC In front.
SC It's all right. It goes in front of your feet, but it goes straight back into the airlock. You're all right.
SC Yeah. Let me see if I can help you. Now. You should just - ease it over towards me. All right, wait.
SC (Garble)
SC No, the trouble is, I have to get it a different way. All right. I got it off. It's the sole thing holding the pole. Now just send it back towards me. Can you do that?
SC What, the pole?
SC Yes.

SL-II MC-642/3
Time: 11:25 CDT, 14:16:25 GMT
6/7/73

SC No, I don't want to do that, I don't think. Let's - Why don't you help me (garble) I have it on.
SC Joe, you've got to have it tethered, and I'll let it slide out - It can slide out.
SC It's not tethered to what?
SC The pole. Let me get it in front of the --
SC What are you going to tether the pole to? Oh, yourself, huh?
SC No. Now you --
SC Oh, the BET.
SC I just - no, damn it. I'll tell you what I want to do. Back --
SC What is that tether you've got on there?
SC That's the pole tether. Now, you should just stay with me a minute. Come back with the pole. I'll tell you what we're going to do. We're going to get in the right configuration --
SC We were in the right configuration --
SC No, we weren't. We were too short. You couldn't slide your pole back. See? Now the tether will go as far up the pole as you want it to. Did you retether it? You follow me?
SC Whew!
SC I'll tether it for you. Hold still. If I can (garble). Can you hold the pole?
SC I've got the pole.
SC Okay. I'm going to hold on to the pole and translate to the tether point. There.
SC Okay.
SC Be sure and lock it. It'll come apart in a second and then out.
SC Okay, it's locked. Let me get back to my - I need to get back. Push me back just so I can get (garble).
SC Wait a minute.
SC I'm on my way (garble).
SC Okay.
SC You got it. Now your assistance. Okay?
SC Okay. That might even help, if I reluctantly have to confess.
SC All right. Now just turn the pole nice and (garble) and can let her (garble).
SC Until you're holding that on there, it's going to be a chore. God dang it. Wait a minute.
SC See the quarter of the sail, Houston?
CC Say again, PJ.

SC Can you see the quarter of the sail - the orange quarter?
CC Stand by. I think we can psyche it out. We do have a good picture.
SC All right, let me come back a little. Now we can go forward.
SC Oh, that's it. Now come up.
PAO This picture is through the command module window.
SC You tie it.
CC Okay, we've got it, PJ.
SC Could you hold one foot -
SC Yeah, you try it.
SC You that stable? If you could hold one foot, man, I could use both hands on this.
SC Wait.
SC Oh.
SC Let me hang on (garble) How's that?
SC That's pretty good. Now to get up under the rubble there.
SC Wait a minute.
SC Make this come forward.
SC Tell me when you've got enough of the sail, Houston. I'll go back into the MDA.
CC We've got enough. Thank you very much.
SC Okay.
SC Tired?
SC I'm not tired. I'm a little frustrated because I have no place to secure myself here.
SC Houston, I've got a suggestion.
CC Okay, we're reading you. Understand you're having trouble in maintaining your position in order to hook it on the strap. Can you give us a little more detail? We're hearing a lot of the conversation but we haven't got a very good picture of it.
SC Well, let's just cool it until we get done. We're working the problem. Bunch of wires in the way. God, that prevented you from getting it that time.
SC Un huh.
SC Trying to let it go, you know.
SC That's it. You've got it right there. Pull back.
SC Can you by any possible means --
SC Oh, it came off.
SC I know it, but can you get hold of that gray rope?
SC Gray rope?
SC The rope we marked.

SL-1I MC642/5
Time: 11:25 CDT, 14:16:25 GMT
6/7/73

SC Yeah.
SC Wait a minute.
SC I'm going to have to - Well, unfortunately, I've got myself tethered to the BET, to the deal right at the moment. Take a rest. Okay. I've got the - -
SC You're pulling me around.
SC I've got the pole.
SC Take it easy.
SC Okay, now. The thing is - listen, help in unhooking that rope back there.
SC Hey, how about - could you -
SC Unhook it from the cleat. I want you in a position to pull on the right rope while I'm holding it in place. Cause I can't do both. Okay?
SC Just one second.
SC That would be the deal.
SC Okay, I've got the right rope.
SC That's the one.
CC Joe, just for your information, we operated on the opposite side of the discone from the one you're operating on. That is, we operated from the right hand side of the discone. That may help you if you need more pole.
SC It's not a question of - pole -
SC It's not a question - I've got more than enough pole, Rusty. It's a question of keeping my feet from flying away so that I can not only reach the thing, but hold it there.
CC Okay, the only thing I can say that in the water tank we stood up almost parallel with the discone, with our feet down by the base and used the discone as a handhold. That helped us. You might want to try that.
SC Yeah, I'm doing that. It's not a handhold I need, Rusty. It's a toothold.
CC Right. We put our feet right at the base of the discone - -
SC That's where they are, Rusty.
CC Okay.
SC It's easy to get it in touch, but it's impossible to get it to stay there.
SC Not impossible, just takes a little longer.
CC That may (garble) speed it up.
SC See what I'm doing, I'm trying to - -
SC - holding on to this rope right at the moment.
SC No, no, I don't think so. Now. Whoops.
SC I'm giving you as much as I can give you.
SC Yeah.

SL-II MC642/6
Time: 11:25 CDT, 14:16:25 GMT
6/7/73

SC All right. You're in good shape.
SC None of it, just a little bit come back.
SC I think I'm on it.
SC No. I can tell you're in front of it; you're still in front of it.
SC You've got to come towards me. Now you're behind it at an angle, see.
SC Yeah, pull.
SC Now you're in front of it.
SC Now you're behind it, still behind it. Got an excellent place to work, but you're still behind it. If you could just come over it right there, behind it - you're in front of it again. (Garble).
SC You're still in front of it, yeah. Got to go back behind it again.
SC How's that?
SC Now pull towards me. No, you're not on it. Are you?
SC No.
SC I'll tell you, when you think you're on, pull towards me, and that ought to pull it right to the base.
SC Uh, uh.
SC No, you're not on it yet.
SC It's pretty thick, Rusty.
SC That's the trouble. That's the trouble right there.
CC Okay. Understand that. Is there any other debris you can grab out there that's not as thick?
SC That's the very thing he's working on.
SC That's the trouble. The damn jaws aren't far enough open.
SC Try closing it, Rusty. Right now.
SC Wait a minute. Hold it. That do it?
SC No. Mostly because it pulled off when we were closing it.
SC Okay.
CC The only other thing we can think of, Joe, is to make sure that they're fully opened before you try to get it over. That'll give you the maximum chance.
SC Thank you. We're going to take it back right now and reset it. Well, we may not have to take it back. Let me pull on it and see if that'll reset.
SC You've got a piece of wire that time anyhow. You were on it.
SC Yeah, I know it.
SC Oh, yeah. I sure am.
SC Let's - I wonder if we could - can we tell if it's fully open?

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SC It looks fully open.
SC Okay.
SC It sure does. Now. I've still got the pull rope.
SC Okay.
SC Okay, let's go back to work.
SC Yeah, (garble) you to it.
SC Oh. Oh. Okay. Mostly because I'm in position, and I don't want to - I'll tell you, I'll try it (garble) now. Let me see -
CC You know the best chance you have is as close to the base of the SAS panel. That's where it's the narrowest.
SC Is that right?
SC But there's a wire bundle there. I got the pole.
SC Okay.
SC Am I all right now?
SC Yeah.
SC The pole is over (garble).
SC Okay.
SC (garble) they could be we're doing it.
CC Okay, Pete, just for your information, you still got plenty of time here til sunset. You've got 29 minutes left.
SC Yeah, we're not sweating anything. I tell you, Rusty, the strap is oriented in the worst - joy - wait a minute -
SC Want to get the (garble) again.
SC Okay, the strap happens to be oriented in such a manner - even though it's not wide, it's presenting its widest side to the cutters.
SC Okay.
SC I can't - -

END OF TAPE

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SC Well, I can't see, Joe, although I'll try, now that you changed positions.
SC Wait a minute. If I can bear against it, do you think I'd be all right?
SC I'm not in too bad a shape to steer this pole myself. Keep - Here, now I got a hand on it, son of a gun, myself, to steady it. How's that? I can steady it --
SC Let's put it in.
SC That's right. First, you do the fore aft and let me do the left right. Got to steer me, because I can't see.
SC Yeah, wait a minute. I got a little torque on my body that's holding that from coming the way it wants to.
SC Well, that may be me.
SC No, it isn't you.
SC I tell you, Rusty, it looks like if we ever get it on the strap, we got it made. Because I can see the rest of the meteorite panel, and most of it's underneath and looks relatively clear.
CC Okay. If you can hook on anything at all out there --
SC I understand --
SC Yeah, yeah, it's not oriented to do that, and we understand.
CC Okay, and for your information, we're about 30 seconds from LOS. And you got 26-1/2 minutes of day left. And we're going to pick you up at Vanguard at 54; that'll be after dark.
SC Where you going, Joe?
SC I can't stabilize myself on this side. I just can't do it.
SC Yeah. Rest. I'll tell you what, Joe. Where's your umbilical with respect to mine? I see it.
SC (Garble) Let me try straddling it like this.
SC Wait. We're getting umbilicals and everything else all twisted up here.
SC Wait a minute; this may do it, right here.
SC Okay. You want the pole?
SC I got the pole.
SC Okay. You want me to still pull? With full strength?
SC Uh huh.
SC All right, let me get in a position where I can do that. I don't know.

SL-II MC-643/2
Time: 11:42 CDT, 14:16:42 GMT
6/7/73

PAO This is Skylab Control; 16 hours 44 minutes Greenwich mean time. We've had LOS at the Merritt Island Station. We will acquire again at the Vanguard Tracking Ship, off the southeastern coast of South America, in about 9 minutes. Joe Kerwin having extreme difficulty trying to attach the jaws of the cutter to the strap. Pete Conrad reporting there is no other debris in the area to which they can attach it, to allow him to get down into the area and assist in getting the cutter on the strap. They were still continuing to try as we had LOS. Pretty fair television out the MDA window during this pass; also a shot out the command module window, in which a corner of the orange sail could be seen. Television of the EVA crewmen showed Joe Kerwin with his legs flailing as he attempted to get the cutter on the strap. Apparently, one of his biggest difficulties is he does not have good foot restraints. You could see Pete Conrad holding the A-frame; mushroom end of the cutter pole was visible. And that bag that was tethered to the A-frame, floating, contains the beam erection tether. During this pass - during this rather strenuous activity, the flight surgeon reports that Pete Conrad's heart rates ranged between 100 and 110; Joe Kerwin, 145 to 150. We'll come back up a few minutes prior to AOS at Vanguard; that's about 7 minutes away. At 16 hours 47 minutes GMT, this is Skylab Control.

END OF TAPE

SL-II MC644/1
Time: 11:52 CDT, 14:16:52 GMT
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PAO This is Skylab Control; 16 hours 52 minutes Greenwich mean time. Two minutes away from the Vanguard. Skylab just barely skirting the edge of Vanguard's range during this pass, about a 5 minute pass, but at a very low elevation angle. The maximum elevation 2.3 degrees. We'll stand by for first words from the crew and see how they're making out.

PAO Seventeen minutes of daylight remaining. We're 1 hour 30 minutes since hatch opening time.

SC (garble) There. Now.

SC Now, where are you?

SC - - and what I've done.

SC Huh?

SC Okay, well our umbilicals are free of each other.

SC (garble). I want you to get back.

SC If I go out, where's my umbilical with respect to yours?

SC Inside of it, right where it ought to be.

SC All right, so I can go under, right?

SC Yes, sir.

SC Right now?

SC Yes, Paul.

CC Skylab, Houston, we've got you through Vanguard here. Sounds like you got it hooked on somewhere.

SC Yes, we do and now all we're trying to do is straighten out the umbilical mess before I go out.

CC Great.

SC I don't believe we'll have to move the cutter. we got it in a dead center spot. All right, you ready?

SC Yep.

SC All right, now. I've got to go - I got to get oriented on this pole right. I got to go - -

SC Now, you want to go with your feet out that way, don't you?

SC Yes. I want you to grab a hold of the pole now to stabilize it.

SC All right.

SC Got it?

SC On my way. Bye.

SC Good by.

CC And Paul, the messages are in the teleprinter if you want to give them guidance.

SC Okay, you may have to feed some of my umbilical out. You may have to tip my - -

SC Oh, boy.

SC Thanks, Rusty.

SC Wait a minute. However you fastened this rope it sure is in there tight.

SC It's all right, just let it come out.
SC Okay, it's coming out now.
SC Let it come over the end first. Let it come over the end; don't pull it all loose, over the end - That's it, much room. That a boy. Bye.
SC Take your time, I want to feed this rope behind you.
SC Hey, and are you -
SC I'm going to tighten the nuts on these poles on the way up. Every single -
SC Are they coming loose again already?
SC Every single one of them has backed off.
SC Isn't that incredible?
SC Yeah.
SC Hey, Pete.
SC Yeah.
SC You're starting out with your umbilical under the pole.
SC All right.
SC (garble)
SC Stay where you are, Pete.
SC I got it.
SC Here. Here. Stay where you are.
SC Joe.
SC (garble) that tether under your unbilical.
SC God damn.
SC Say again.
SC Look, I wish you hadn't pulled that rope out of the bag. Holy Christmas.
SC Listen, I gave it one tug and it all came.
SC Well.
SC Okay.
SC Okay. Oh, I'll have to untether.
SC (garble)
SC - - tether.
SC No.
SC Okay.
SC Now, which is which?
SC This is the pole. It's the inside - -
SC All right.
SC That's the one.
SC But this one comes with no practice, man. Now let it - -
SC - - that's right.
SC Let it come out - got to come out of the whole dam thing. Hope it goes under.
SC It's got to.

SC Huh?
SC It must go under there.
SC All right.
SC Or we never could have gotten in that box in the first place. Right.
SC Yes. All right now, am I free?
SC All right. Wait a minute. Wait a minute.
SC It's under the pole.
SC Yes. Okay, now go.
SC All right, bye.
SC Hello, Houston, you there?
SC Yes, sir. We got you for another 2-1/2 minutes.
SC Where is - where is the BET, Joe?
SC It's caught on - ho, ho, that's what I was afraid of. It's all right.
SC Oh, that's the whole BET there, isn't it?
SC All right.
SC Okay.
SC Stay put.
CC Okay, we got you for two minutes, and then we're going to have about an hour dropout before we pick you up again at Goldstone. That'll be at 18:03.
SC Okay.
CC And you have about 13 minutes of daylight left. And no big sweat.
SC Understand. Yeah, I'm watching it on the pass - on the day/night thing, Rusty.
CC Okay, fine.
CC And Paul, if you want cooling, we recommend you just disconnect from the food (garble) as your water (garble)
SC Joe.
SC Yes.
SC Umbilical is holding me up.
SC It is, huh?
SC I don't have any umbilical.
SC All right.
SC I got it. Never mind.
SC It won't reach, Rusty. The umbilical is flat not long enough to reach.
CC Okay, we're saying disconnect your comm from the fuse box (garble)
SC No, it's still coming.
SC At the end of it already.
SC Good music.
SC Darn it.
CC Which side of the discone have you got your umbilical?

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SC On the right side facing aft the side closest to the - to the SAS panel
CC Okay, your umbilical is long enough, it's probably snagging somewhere. Joe, you might want to take a look at that back down there - -
SC - - I think it's all right, Rusty. He's down there.
CC Okay.
SC It hung up, but it's all right.
CC Great, thank you.
SC I just cut it with my trusty boy scout knife.
CC We're going to disregard that one.
SC Yeah, please do.
SC Gee, are you going to attach the other thing
SC first. Well, the trouble is - I don't know how I did it but I got the BET thing in the wrong place. I've got to get this BET thing under my umbilical.
SC Under your umbilical.
SC Hell, yes.
SC Oh, all right. I guess I better come out and help you.
SC No, don't you move. Two of us out here is plenty.
PAO This is Skylab Control at 17 hours Greenwich mean time. We've had loss of signal at Vanguard. We won't acquire again until we reach Goldstone 1 hour 3 minutes from this time. We copied the time that Pete Conrad started down the pole. Said his third goodby after two false starts. At 16 hours 57 minutes. And as we ended the pass Joe Kerwin indicated that Conrad was down at the cutter end, and Conrad then reported the - the BET, the beam extention tether, was not in the right place. He had to pass it under his umbilical before he could start attaching it. 8 hours of - sorry, 8 minutes 45 seconds of daylight remaining. One hour 2 minutes to the next station, which will be Goldstone. And this EVA has been underway 1 hour 38 minutes 37 seconds. That's since hatch opening. At 17 hours 2 minutes GMT, this is Skylab Control.

END OF TAPE

SL-11 MC-645/1
Time: 12:31 CDT, 14:17:31 GMT
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PAO This is Skylab Control; 17 hours 31 minutes Greenwich mean time. Skylab is on its 347th revolution, at this time passing just beyond range of the Carnarvon, Australia, Station. We're 32 minutes away from acquiring the spacecraft at the next tracking station, which will be Goldstone. The crew has 14 minutes of darkness remaining in this revolution. And it's been 2 hours 8 minutes since the hatch was opened for this EVA. At 17 hours 32 minutes GMT, this is Skylab Control.

END OF TAPE

SL-1: MC-646/1
Time: 12:48 CDT, 14:17:48 GMT
6/7/73

PAO This is Skylab Control at 17 hours 48 minutes Greenwich mean time. We're about 15 minutes away from acquisition at Goldstone. Skylab out over the Pacific Ocean now, moving up onto its northern most reaches at 50 degrees north latitude. It's been 2 hours and 26 minutes since the hatch has been opened. Crew is in daylight now. 54 minutes of daylight remaining. We don't know what has been transpiring, naturally, and won't know until we get to Goldstone. During the height of the activity in an attempt to secure the cable cutters, Joe Kerwin's heart rate did reach a high of 150. And the flight surgeons say his metabolic work load peaked at 2000 British thermal units. They would not like to see a sustained period at those rates or at those workloads. However they believe he has had sufficient time to rest, particularly during the darkness, the night side of this pass. We're 13 minutes away from AOS now. We'll come back up a couple of minutes prior to Goldstone acquisition. At 17 hours 50 minutes GMT this is Skylab Control.

END OF TAPE

SL-II MC-647/1
Time: 13:01 CDT, 14:18:01 GMT
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PAO This is Skylab Control; 18 hours 1 minute Greenwich mean time. Two minutes away from Goldstone acquisition. Skylab will pass almost directly over the Goldstone Tracking Station on this revolution. And then pass directly into Texas acquisition before going LOS and going down across the west Coast of South America. This, for all intence and purposes, is the last stateside pass of the day. One more acquisition at Goldstone, but that's very short. About 3-1/2 minutes. We're 2 hours 39 minutes since hatch opening. And 41 minutes of daylight remains for the crew. We'll stand by for first transmission and we are configuring on the ground to receive television, with the crew ascending.

SC You are now free and clear.

SC They're all accordian except for the (garble) edge. You see it?

SPT Yep.

SPT They're all accordian about evenly, too.

CDR Well, the two outboard ones are further out to the very inboard ones.

SPT Let's tell Houston to fix our gyro before we go.

CDR Yeah. Talking about stuff.

SCHWEICKART Hello, there we're listening to you. You're coming in loud and clear. And we see SAS amps.

CDR Yeah. Well let's take care of our C-gyro, we ain't got any of them.

SCHWEICKART Okay. We're looking at it.

CDR All right. I'll tell you where we are. We've got the wing out and locked, the outboard panel and the middle panel are about out the same amount, and the third one is not quite. Now, Joe, I think before you come in, you better take a look up there and make sure that third one is clear and all the debris.

SPT That's really bugging me.

CDR All right. I can do that myself, right here, if I can get there from here.

SCHWEICKART Okay, Pete. We don't understand, that the outboard two were almost all the out the last time when you locked - -

CDR No, no, no, no, no, no. They are further out that the inboard ones.

SPT But none of them are out very far. All of them are accordian evenly and the angles between them, look to me, like about 20 degrees, Rusty. So they've got a good long way to go.

SCHWEICKART Okay. Are they still moving? And how long ago did you get them out?

SPT Set them out about 5 or 8 minutes ago. And they're not still moving.

CDR Doesn't look to me like they're moving at all. If they are, it's really super slow.

SPT I don't think they're moving. No doubt in my mind. They're staying right where they are, for the moment. You guys are going to bait them out, right?

SCHWEICKART That's the plan.

SPT Okay. I think you're going to have to that, is what I'm saying.

CDR I'm trying to - -

SPT Go on down to the SAS, Pete. And let's get going.

CDR No, I want - Okay.

CDR Excuse me.

SC (Laughter).

SCHWEICKART Okay. Pete, can you tell us where you are? Are you still out near the SAS wing? What's your status there?

CDR I'm out (garble) headed for the SAS. Right this instant, I'm almost - I'm in the SAS. And I'm getting ready to pull in all my umbilical - Joe, can you see my umbilical?

SPT Just a second. I was doing a 360 to get mine in (garble) there.

CDR Yeah. Well I'm trying to - let me get in here with my umbilical in the right place.

SPT I think I want to do it that way, right?

SC (Garble).

SCHWEICKART Joe, when you get a chance, give us a status of the BET, where is it and how tight have you got it, et cetera?

SPT The BET is between the panel and (garble) and its rigged, Rusty. And it's as tight as I can get it, which isn't terribly tight, because of the characteristics of the clete.

SCHWEICKART Okay. We - -

SPT It's also not terribly secure. Because I don't have anything to secure it with. But it'll stay there as long as nothing hits it, I guess.

SCHWEICKART Okay. Would you describe it as having no slack in it, but not very much tension?

SPT That's correct.

SCHWEICKART Okay. That's exactly what we wanted. Thank you.

SPT (Garble) all the time.

SC Hey, Rusty. Do you think we've got another condensate tank Delta-P light. I'm going to go through the dump procedures again.

SCHWEICKART Okay. And we would like for you to leave it in the dump procedure, that is. We'd like you to leave it in a vacuum - -

SPT Whoops.

SCHWEICKART — in a vacuum on that side.
SPT — That's how it was when the light came on.
CC — Okay. Thank you.
CDR — Yeah. Joe, hold it just a minute.
SPT — Yeah.
CDR — While I get these. I don't have eyes [illegible] in whose, here.
SPT — I'm trying to get down and help you. And I'm hung, by the fact that I'm still tethered [illegible] to the pin.
CDR — Okay.
SPT — So I think I'd like to get this - -
CDR — All right, now I'm going.
SPT — Like to get this pole going in some direction or other.
CDR — All right. Now I've got mine all down. Here, and putting it away. Okay. I grabbed that. Now, where is it?
SPT — What?
CDR — Oh, I'm just looking for my waist [illegible]
SPT — Oh. Easier to track another guy than it is your own, you know it.
CDR — Yeah. Unfortunately, I've got a [illegible] down here, too. And I don't know why.
SPT — You come along with.
CDR — Huh?
SC — It wants to come along with you when you went down.
CDR — It's hooked to me somehow, and behind my feet and you, or something.
CDR — Oh, no it is. Wait a minute. See it.
CDR — All right, [illegible] your's. Now all I need to do is come over my head [illegible]. I can't believe we've got us in, without being tangled.
SC — (Laughter).
SPT — It's due to a 100 percent skill, and zero percent luck, right.
CDR — Yeah. Okay.
CDR — Now. I'm ready for you. All right -
SPT — I'm a coming.
CDR — Hand me the pole.
SPT — I'll get it a more favorable location momentarily. I'm trying to manage - -
CDR — You're playing around with it.
SPT — I know it.
SCHWEICKART — Joe, this is Houston. If you've got a look at it, was the [illegible] panel clear of debris? Or is it hanging up on it?
CDR — Yes, yes.
SCHWEICKART — Okay. Thank you.

CDR Best I could tell.
SPT Yeah, it's been that way.
CDR Always been that way.
SCHWEICKART Say again.
CDR Oh, we're talking to ourselves, Houston.
SPT Wait a minute. I need to stop right here, untether from the pin and get myself toward it.
CDR All right, take your time.
SPT Yep.
CDR We got the main job done.
SCHWEICKART And Joe, if you get a chance before you leave the area, if you'll look at the connector on the top of the AUX tunnels and see if there is any obvious debris around it.
CDR No, it's clean -
SPT (Garble) onnector.
CDR It's clean.
SPT On top of the AUX tunnel, I cannot see from where I am right here.
CDR There isn't anything out there but that old piece of meteoroid shield that is underneath the wing.
SPT That's sure is what it looks like.
CDR Ed, you got - -
SC From the angle I can get on it, it's completely clean, your right, Pete.
CDR You guys called it pretty well. It's - When I cut the strap it was under tension and it went about 2 feet. Then it stopped, then I had to break the ah -
SPT Oh, look at that.
CDR Whatchacallit. Look at what?
SPT Broke my foolish 6 foot tether here. More of a henderance than a help, all of a sudden. As a matter of fact, it you'll, well - I'd like to stuff it away some place. Not quite sure what to do with it.
CDR What you doin, I'm holding on to the pole.
SPT You're holding on to it?
CDR Yes.
SPT Oh. Is it in a good position for you?
CDR Yes. Want me to get rid of it for you?
SPT Well, let's bring it on down.
CDR Okay. Keep coming.
SPT I have to roll it here.
CDR Okay.
SC To get the blades in the right configuration again, to get by this pole.
CDR Yep.
SPT Okay. Coming?
CDR It's coming.

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SPT Keep her coming.
SPT You've got it now. It's out of my hands.
CDR I got it.
SCHWEICKART Okay. MV-1 and 2. We're seeing a fairly high Delta-T on the gas temperatures going through. We'd like you to, if you can, to go ahead and increase your water cooling.
SPT Increase or decrease?
SCHWEICKART Well, we'd like to see you taking more out with the water, and less out with the gas.
SPT Okay. Fine. I'll tell you what. I powered down for the night, Rusty. And just haven't gotten around to powering up again.
SCHWEICKART Okay. Fine, Joe.
SPT I just pushed it up.
CDR I felt rather comfortable, myself.
SPT And I'm getting cooling and it feels very nice.
SPT That's good. They obviously commanded it back on. Took care of the problem for us.
CDR Okay. The pole is tethered and you're clear of ah - -
SPT All right. I am coming back.
CDR All right. Let me change your umbilical. Wait, wait, wait, wait.
SPT All right, I'm waiting. I have to get hold of this hand rail.
CDR Your thing is hung up, up there.
SPT No it's not.
CDR Okay. I got it.
SPT It's under my foot, however, wait a minute.
CDR Let me get it here. You can stick it in here.
SPT Now, where's your's.
CDR Mine's in back. It says back in the back.
SPT You want me to go in and stow your's right now, before we do anything else? hat might not be a bad idea, Pete. We won't need it again.
CDR All right.
SPT Get it out of our way.
SPT Let me make it a little (garble) while you're doing that.
SPT There we go.
CDR Watch the tool. Watch the tool.
CDR All right. That a boy. Now you're all right. Hold it, hold it. Darn tools's in the way. Let me get it out of your way. I don't want you to cut yourself on it. Okay. Now. Go on in.
SPT As a matter of fact I'll come in here stow your umbilical, and then stow that tool.
CDR Then I'll take it apart.

SPT Yeah, we'll take it apart and put it away.
CDR (garble) B2A
SPT We could probably do that at night.
CDR No sweat.
SPT Now - -
CDR It's working.
SPT - - the umbilical.
CDR You've got your hand on it.
SPT Holy Mackerel, it's all the way out. Clean out of the sphere.
CDR Okay. Are you ready?
SPT Before you go, let's undo it here.
CDR All right.
SPT (garble) with it coming so hard.
CDR Just take your time.
SPT Okay. That's the first time I've ever seen one clean out of the sphere.
CDR Ah, Houston. Are you still there?
SCHWEICKART Yes, sir. We are. We've got the C-gyros back on and we're going back to SI.
SPT Rusty, we did that job with about 3 feet of umbilical to spare, and Pete.
SCHWEICKART Okay. And I understand you're not gone out to the ATM yet.
CDR No.
SPT That's affirm.
CDR No, we just spent the night out there on the solar panel.
SCHWEICKART Okay, before you go out there we would like to ask Paul, to turn off the image disector and turn off the photo multiplier on 54, to prevent any corona problems when you're putting out gas out that end.
CDR You guy will make changes right to the bloody end. (Laughter).
CC Right.
CDR While you have a moment, I an't guarantee you that that third panel does not have solar shield underneath it, because I don't know where the solar shield went to. You were correct. It did have force in it. From the number one torsion rods. And it's possible it could have flapped out there and hung up the inboard solar panel.
SCHWEICKART Did Joe get a look down the side just before he left the discone antenna?
SPT Definitely did, sir. I saw no hangups what so ever. I saw nothing above the level of the meteoroid shield.
CDR Okay.
SPT Hanging up that sail. It - that blanket should come out.

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CDR Okay. And I suspect that seeing the (garble) right? Isn't that the coldest one?
SPT I don't know.
SCHWEICKART They were all about the same temperature, Pete. But that may be a slightly colder. Okay, Pete, just out of curiosity, did you cut through the strap or pry it, or what did you do with it?
CDR Cut through it. And I'll tell you what - Let me tell you what it was. It was where the meteoroid shield had torn off of both sides of the angles, so that we had two angles and a juggler with the bolts in it. We had no flanges. Okay.
SCHWEICKART Okay. Understand. You had both flanges until the 7075 angle.
SC No. - -

END OF TAPE

CDR I'll tell you what - Let me tell you what it was. It - it was the meteoroid shield had torn off of both sides of the ankle, so that we had two ankles and the doubler with the bolts in it, with no flanges. Okay?

CC Okay, understand you have both flanges of the 7075 angle.

CDR No. Yeah, well, we had half of one flange, half of the other flange and the doubler in the middle with the bolt. And the bolt in fact - the long end in fact - there was one little lousy single bolt in the bitter end. It had driven far enough three - through to hold the strap. Everything else was free.

CC Okay, we got 1 minute to LOS here at Texas, and we'll be picking up Vanguard at 28, that's 10 minutes from now.

CDR You're down to - hold it, hold it. Don't go any further.

SC (garble)

SPT Ah, this is the most working EVA.

CDR (garble)

SPT ...stowing that darn umbilical.

CDR Rest while I take the pole apart.

SPT Okay.

CDR Okay. Have you got some place to strap all that junk?

SPT I've got one long strip that will have to do.

CDR Okay, now let's see. (garble)

CDR Going to pull the same stunt, I'll take it apart and put it in there. Okay?

SPT I'm going to digress myself with my 6 foot tetner.

CDR Here comes the tool.

SPT Just a minute. I ain't ready for it.

CDR Say, why don't I take the the tool head off?

SPT Yeah, that's a good idea at this point, Rusty. I'd rather have it off.

CDR My name is Pete.

SPT (Laughter) Sure. I've really done it.

CDR What did you do?

SPT I called you Rusty.

PAO This Skylab Control, 18 hours 18 minutes Greenwich mean time. We've had loss of signal at Texas. Tracking ship Vanguard will acquire in about 9 minutes. The solar array wing is out, the bolt cutters successful in severing that aluminum strap. The three solar cell panels on the - on the wing not fully deployed, the - the inboard one less deployed than

the other two. The plan is to initiate a maneuver with the spacecraft - 45 degree pitch maneuver - to get that wing more into the Sun, warm it up, and it's believed that the panels with them deploy fully or at least more fully. The dampers on those panels are thought to be frozen because of the very low temperatures they've seen. EGIL saw amps coming from that wing as soon as he got data on this pass. We don't have a reading yet on how much power we're receiving. We'll try to get that as soon as we can. We'll come back up again just prior to the Vanguard pass. At 18 hours 20 minutes GMT, this is Skylab Control.

END OF TAPE

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Time: 13:25 CDT, 14:18:25 GMT
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PAO This is Skylab Control; 18 hours 25 minutes Greenwich mean time. 2-1/2 minutes away from acquisition at Vanguard. When we had loss of signal at Texas the two EVA crewmen Conrad and Kerwin were back in that fixed airlock shroud area. They will disassemble the cutter pole and then Joe Kerwin will go up to the work station on the Sun side of the Apollo telescope mount to replace the magazine in the S082A experiment - extreme ultraviolet coronal spectroheliograph. This is the experiment that photographs the Sun in selected ultraviolet wavelengths. Had a problem with that; film appears to be hung up in the magazine at the present. And he will latch open the door to the S054 experiment, the X-ray spectrographic telescope experiment that takes X-ray photographs of the solar disk and 5 spectral bands. This door has presented a problem in the past so that it will be permanently latched open. We're slightly less than a minute away from acquisition. The crew opened the hatch 3 hours 4 minutes ago and they have 16 minutes daylight left. We'll stand by for this Vanguard pass.

SCHWEICKART Okay, Skylab. Houston here. We've got you for the next nine minutes and at your convenience we'd like a GO on the maneuver.

SPT Roger. You can go for the maneuver, and Rusty did you copy my description of the nail?

SCHWEICKART Negative, sir. We just picked you up right now, so go ahead.

SPT Yeah, let me repeat that.

PLT It's on B channel, Joe. It's recorded so they can get it later.

SPT All right. Let's press on then. Good.

CDR Coming out to you right now old Buddy.

SPT Stop it before it gets there because I'm involved in getting back into my shoes, huh?

CDR Yeah.

SPT Okay, I'm in the boots. Bring it on out.

CDR Okay, it's clear. Your umbilical -

SPT Yes, nice and clear.

CDR Yes, it's on its way.

SPT There's a bit of problem at first, leaning back (laughter) towards the Earth.

CDR Say when.

SPT Keep it coming. Ready, when.

CDR Let me tell you something Joe.

SPT Yes.

CDR That handle? It's very stiff and it's a very tight fit.

SPT This one.
CDR Yes sir. So hang on.
SPT Okay.
CDR You may have to really wrinkle to get it out.
SPT I've got it.
CDR Okay. Going to retract.
SPT Okay. Okay it didn't work. All right. It's stowed.
CDR Lock it.
SPT I guess it's locked. All right, in work.
CDR I think I've got -
SPT It's funny but I don't think so. Bright out here. And the doors are marked on the real ATM.
CDR Need any more umbilical?
SPT No, I don't.
CDR Okay.
SCHWEICKART PLT, just a reminder. We did have one pen and ink change there that didn't come up on the teleprinter -
SPT Oh boy, oh boy.
SCHWEICKART - - pads there for you.
SPT What a gorgeous view. Go ahead, Paul.
PLT What was it?
SCHWEICKART Okay, that was - remember we want to close the door and wait 20 seconds before you turn the main power ON there on the checkout.
PLT Okay, you're going to have to tell me as we go through it, I think.
SCHWEICKART Okay, just let me know.
CDR Hey, Rusty. What quads do you want me to look into - quads that I can see from here and I'm not even exactly sure where I am. I'm trying to figure that out right now, what I'm looking at - what am I looking at?
PLT Let me get on with Joe then, Pete.
SPT Paul, Rusty, the S054 door is closed which surprises me. I thought it was open.
SC We did, too.
SPT Well it ain't.
SCHWEICKART Joe, go ahead and open it. Hit it open.
SPT Okay. Paul -
PLT What?
SPT Go ahead with your checklist.
PLT Okay.

PLT Okay, you got the lid open?
SPT On 82A, no.
PLT Yes. Well, open the lid.
SPT All right. Unlocked. Open. Cocked.
PLT Okay. Take the new one out and put it in a temporary stowage container.
SPT Complete.
PLT Can you open the S082A door, underneath the launch lock, and move the move the locking handle to release the magazine.
SPT Okay. Once again I have a problem with the film door because the aperture door is closed.
SCHWEICKART Understand the 82A aperture door is closed, Joe?
SPT Yes sir. Every aperture door in the place is closed.
SCHWEICKART Okay, we do need to get that one open, and we do not want you to unpin that one.
SPT All right, I understand that, but I would like it open so I can get at the film.
SCHWEICKART Okay, that should be - P. J. should just be able to have POWER DOORS to OPEN. Stand by just one.
SPT I'm clear, Paul.
PLT Yes, are we clear, Rusty?
SCHWEICKART Beg your pardon, say again.
PLT You want me to do it.
SCHWEICKART Negative, Stand by just 1 second. Okay, the answer is GO. POWER DOORS to OPEN.
PLT Okay, POWER DOORS going OFF.
SCHWEICKART Negative, Sir. POWER DOORS ON.
SPT Okay, it's opening. Yes, it's opening. That's fine, it's clear. Okay, I get the door open. It interferes with S054 a little more than the trainer. And the LAUNCH LOCK is to UNLOCK. Go ahead, Paul. Okay Okay? That's fine Whoops. Hey, that's got it. I think. Pesky thing. It's in the can. The can is closed and locked and I'm going for the new film.

SPT All right, arrow to arrow, and I'll stick it in far enough to get it somewhat secured. Now I will extend the handle. Okay, the handles out and locked. Here we go. It didn't go very - you know, real firmly, positively, but it appears to be in all the way. The white flag is fully over it and I'm gonna bolt the lock handle down. And it came in with a nice firm clunk. The flag's there. Okay. Go ahead. Take six frames. Do whatever you need to do.

CDR Wait, wait a minute. Have you pulled the pin on the 54 door down there? Well, okay. All right, go ahead.

CDR Listen, everything they do on the ATM is chopped up, and I'm going to give them a little dissertation after we get inside.

SCHWEICKART Okay now. Stand by now, Pete. P. J. we're ready to give you that little MOD there, if you want it now.

PLT Okay, let's have it.

SCHWEICKART Okay, you see where it says EV 3 panel 130?

PLT No. Why don't you tell me what to do?

SCHWEICKART Okay, on panel 130, you want to go FILM RESET, SELECT XUV SPEC.

PLT Go ahead.

SCHWEICKART Okay, RESET switch to RESET.

PLT Okay, it reads 201.

SCHWEICKART Okay, that's just right. Okay, now you want to go POWER DOORS to OFF, and wait 20 seconds and Joe should see the door close.

SPT It's closing. It's fully closed.

SCHWEICKART Okay, P. J. you can now pick up. And the checklist you've got there, that's your normal message, With MAIN POWER switch ON, power doors talkback white, and barber pole, on down the rest of the thing.

PLT Yeah I (garble) this last one out of sequence Rusty, I gotta pick up where I am.

SPT Here cComes the terminator.

SCHEICKART Okay, be advised we will not be doing the maneuver until Goldstone, next rev. We're going LOS here, we're picking up Goldstone at 19:43.

PLT Okay. Okay.

CDR You guys get that ATM stuff squared away. I can't see having two guys hanging out a hatch, and they've got - procedures are all screwed up.

SL-II MC-649/5
Time: 13:25 CDT 14:18:25 GMT
6/7/73

SCHWEICKART Rog.
CDR EVA procedures were in good shape, Rusty, you guys did a good job, but I'm a little hacked at this ATM Mickey Mouse.
SCHWEICKART Okay. Just as we're going over the hill, P.J. we do need you to go to SI here, to get us back into configuration.
CDR You get his last, P. J.? Okay.
SPT Say again.
PAO This is Skylab Control 18 hours 39 minutes Greenwich mean time. We've had loss of signal at Vanguard. We do have a 1-minute pass at the Hawaii station in 59 minutes. That will be followed by about a 3-1/2 minute pass at the Goldstone station. As we had LOS, Joe Kerwin had successfully replaced the magazine of the S082A experiment, and had latched open the door of the S054 experiment. A preliminary assessment here in the Control Center, based on first look at the solar array wing, we believe that two of the solar panels are deployed about 40 percent, one about 30 percent. I don't have any power numbers yet, but EGIL believes that in the present configuration of the panel, there is enough power to charge all eight of the power conditioning group batteries in the airlock module electrical power system. In the present configuration there is enough power being produced from the deployed solar wing to charge all eight batteries. We will plan to do the 45 degree pitch maneuver during the Goldstone pass, and let that wing hot-soak in the Sun to try to free the actuators and get full deployment on the panels to provide even more power. At 18 hours 41 minutes, this is Skylab Control.

END OF TAPE

SL-1I MC-650/1
Time: 14:08 CDT, 14:19:08 GMT
6/7/73

PAO This is Skylab Control at 19 hours 8 minutes Greenwich mean time, thirty minutes away from a short 1 minute pass at Hawaii. Here in the Control Center the clock we've been using for EVA is continuing to count. It shows 3 hours, 45 minutes since hatch opening. We would expect though that the crew is back inside and has buttoned up the hatch. They were essentially through with the EVA when we had LOS at Vanguard. Remaining task were to break down the cable cutter pole, stow the sections in the air-lock module. And then ingress themselves while trying to stuff their umbilicals back in the air-lock module which is no small task in itself as you've heard. They've had problems with the umbis - umbilicals all day. So when we see them at Hawaii, we'd certainly would expect them to back in the spacecraft. Spacecraft is in darkness now, 8 minutes remaining in the night time for the crew. 28 minutes from acquisition at Hawaii and 19 hours 10 minutes GMT, this is Skylab Control

END OF TAPE

SL-II MC-651/1
Time: 14:36 CDT 14:19:36 GMT
6/7/73

PAO This is Skylab Control. Greenwich mean time 19 hours 36 minutes. We will have acquisition over the Hawaii tracking station in approximately 1 minute. This will be a very brief pass of approximately 1 minute. We will hear from the crew on a success of closeout of the - closeout of the extravehicular activity.

CC Skylab Houston at Hawaii for just about 30 seconds.

CDR Okay Houston. Be advised that we had another deactive gyro on us that we reconfigured the gyro to and now we're having a MOL SIEVE flow problem. I'm not exactly sure of what it is. We also got a secondary coolant slope - coolant loop temp low. We shut that off and turned on the primary loop.

SCHWEICKART Okay, we got that. Stand by just one.

SCHWEICKAR. Do you have a redundancy management enabled or disabled on the C-axis?

CDR We are in rate gyro 2 only with RM enabled. It was a 50036 kunty.

SCHWEICKART Okay, stand by just one.

SPT We called up the gyro displays and gyro 1 was cycling from plus mini to minus mini.

SCHWEICKART Roger we like gyro 2, but stand by on the RM.

SPT Okay.

CDR Okay, now the MOL SIEVE heat exchanger (garble) temperature is reading 5 degrees. And the thing is making some really weird noises there with the fans on.

SCHWEICKART Okay, on the rate gyro configuration, we're going to commanding that from the Ground, so we'll take care of the redundancy management.

SPT What are you going to leave us in?

SCHWEICKART Okay, all we're going to do is inhibit redundancy management. We like gyro 2 and we're going to use it as a baseline and compensate 3 to it. And stand by and I'll give you some information about the maneuver.

CDR Okay, and anybody that knows anything about the MOL SIEVE, on MOL SIEVE A, the fan - - we powered up the secondary fan, and after about 3 minutes operation it started making a - an in and out - almost as if a flapper valve is flapping back and forth, opening and closing. It does it on both the primary and the secondary fans.

SCHWEICKART Okay, we read. Stand by.

SCHWEICKART It looks like what we're going to plan to do here is maneuver at Goldstone, we're going to try to get that maneuver in at that time. Just stand by - -

END OF TAPE

SL-II MC-652/1
Time: 14:42 CDT 14:19:42 GMT
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SCHWEICKART Okay, Skylab. Rev do you read?
PLT Loud and clear.
SCHWEICKART Okay. First thing - order of business here. We need you to get this - the primary coolant loop OFF, we'd like you to go to secondary coolant loop inverter 2, pump Bravo. Over.
CDR That's complete.
SCHWEICKART Roger. Understand, that's complete, and stand by and I'll give you some information on the maneuver here.
CC Okay, the information on the GYRO status and the maneuver is that we are running on Z-2 and we're gonna use that as a baseline. We're gonna compensate Z-3 to it after about a rev of data. And at that time we plan to switch to 2 and 3 RM ENABLE. Now that'll take us about a rev before we get there, so we'll run on SINGLE GYRO up until that time. We will be starting maneuver - the maneuver about now, and you can expect TACS firings because we are saturated in that axis.
CDR Roger.
SCHWEICKART And we're working the problem on the MOL SIEVE here and we should have some information for you shortly.
SHWEICKART Okay, just for information. We do think that Z-3 is okay, but its compensation is bad, so after we get the compensation in, we think we'll have a two-gyro situation about one rev from now or something.
CDR Okay, also, what's the nominal configuration for the valves on the condensate tank when we're hooked up to the holding tank?
SCHWEICKART Stand by 1. And for your information, we're working out a message where we can get you - where we can get you a single pad which will modify your post-EVA that will take care of the total configuration. And that should be coming up here probably by Vanguard. In the meantime, Pete, we got the good news part of this whole thing and that is, that today for lunch you may have hot dogs instead of cold dogs.
CDR Roger.
SCHWEICKART Okay, and the configuration on the condensate tank is FILL and CLOSE.
CDR I read that. We've got four (garble) items to hook back up to a (garble), so that one's okay for the moment. It looks to me like we've got something blocking MOL SIEVE A. Can you hear it? The fan is(garble) just -
CC As a matter of fact, we can hear it. Okay, what we're recommending for right now is MOL SIEVE A

and B FANS OFF. We got about 30 seconds to LOS at Goldstone, we'll pick you up Vanguard at 20:05.

CDR Okay.

SCHWEICKART And if we haven't lost you here yet, quite, then we'd like to use your head on lights. We'd like to have you minimize it here, until we get back in solar inertial after a few revs, and just keep them to a minimum, but whatever you want there.

CDR Okay.

SCHWEICKART Okay, and if you still read us, we would like to have the OWS HEAT EXCHANGER FANS in the aft compartment ON.

PLT We will Dave, as soon as I pick up the checklist.

SCHWEICKART Okay, dandy.

PAO This is Skylab Control, Greenwich mean time 19 hours 48 minutes. We've had loss of signal over the Goldstone tracking station, with acquisition scheduled in 16 minutes over Vanguard. During this brief stateside pass, Commander Conrad discussed with the ground the apparent noise being made by MOL fan - MOL SIEVE fan B. Mission Control Center, through astronaut Rusty Schweickart, reccommended to turn both MOL SIEVE fans A and B off for right now, and the ground will continue to look at it over the Vanguard tracking station. The ground also advised the crew that the Z-RATE GYRO looks good right now. Z-RATE GYRO number 2 and they're getting ready to pave up the commands to make the maneuver to put the vehicle in a 45 degree attitude to turn the newly deployed solar panels toward the Sun. At Greenwich mean time 19 hours 49 minutes, this is Skylab Control.

END OF TAPE

SL-II MC-653/1
Time: 15:04 CDT, 14:20:04 GMT
6/7/73

PAO This is Skylab Control, Greenwich mean time 20 hours, 4 minutes. We will have acquisition over the Vanguard tracking station in approximately 1 minute. The crew has been back inside the orbital workshop in the air-lock area for approximately 1/2 a revolution. We anticipate conversation with CAPCOM Rusty Schweickart and Bob Crippen with the Skylab crew.

SCHWEICKART Skylab, Houston, we got you over the Vanguard for about 10 minutes.

CDR Whoopy.

SCHWEICKART Okay, I got some good news for you. First of all everybody down here is shaking hands and we wish we could reach up there and shake yours. That was a dandy job and everybody was very pleased, and secondly If you haven't already gotten there we're saying press on with the normal post EVA checklist down to page 3.1-8 where it says eat. Go ahead and have a nice one and just cool it. We'll - we'll take care of it from there on and get back up to you if we want you to go past there. That is we do not want you to go into the ATM reconfiguration.

CDR Okay, we - we - what have you got for us, another EVA tomorrow?

SCHWEICKART Well, we're considering all kinds of things, you know, people are expecting great things. You do a good job - -

PLT Hey, Rusty, see I got - I got a couple words. One is, in order to get the heat - OWS heat exchanger fans to start up when in the OWS position, I had to come close those logic breakers. Now they'll continue to run with the breakers open, but I had to close the breakers to get them started.

SCHWEICKART Okay, we copy. Thank you.

PLT Okay, now the other thing is a recommended change to the EVA checklist is far into the EVA have somebody turn off the fire sensors in the aft lock compartment or it gives the PLT pitter-pat when both fire sensors go off when the Sun shines in the locker compartment during the EVA.

SCHWEICKART Thank you, that - that - the choice is subtle, we appreciate that one.

CDR Just one sensor, 2392-2, the one that is sticking out and not looking back into the heat exchanger gets reflected UV, I guess. Cause it sure went off right after we popped into daylight Joe was halfway over the hill and I was halfway out of the air (garble) alarm down there (garble)

SCHWEICKART Okay, thanks.

PLT Also, indications are we may have frozen up the mol sieve, if such a thing is possible with the fan

off the out temperature - temperature out indication is gradually coming up. And that's - the fans, both primary and secondary run. They both make the same strange noise and they don't suck. As Pete says, it's like their blowing into a blocked pipe which they may very well be. Now, we got a question, did we freeze the plates or did we dry them out and will we have to rewet them, I don't expect answers now, but those are things you guys ought to be thinking about.

SCHWEICKART Okay, we got that, thank you.

CDR We changed something else. When it first came off and I got to looking at it, its dewpoint with 32 and it has slowly crawled up to 44. Now, we have the original air flow configuration back and that we've hooked up the big duct between the OWS and we have our fan running, blowing hot air on the heat exchanger and we're trying to move some hot air up into the MDA because it's pretty darned cold up there, now.

SCHWEICKART Okay. The only thing we may have to do there is do some power down. So we'll let you know though if we need to power any of that stuff off. We got - we're in a bind here between getting things warm and keeping the power down.

CDR Understand, and what's the matter with CBRM number 3. I noticed it's all shut up. Did y'all do that?

SCHWEICKART Okay, we did that down here.

CDR How about telling us?

SCHWEICKART Okay, that's to keep the heaters off the battery problem, there, we shut it down from here. There's no sweat with that.

CDR Okay.

CC And, PLT, I wonder if we can have some positive feedback, probably from Joe and Paul. Did the frames decrement on S082A, and was S4 door in fact pinned open after you got done?

CDR Everything came out just the way it was advertised, we took one picture and it decremented to 200. It went to an operate light and back to the green. So, y'all had the problem figured out.

CC Fantastic.

END OF TAPE

CDR - - it had decremented to 200. It went to an operate light and back to a green. So ya'll have the problem to figure out.

SCHWEICKART Fantastic.

CDR And Joe pinned the door, no sweat, it's pinned open.

SCHWEICKART Okay, we suggest you have a very nice lunch and maybe even a little siesta there. And we'll get back to you.

CDR Okay, we've got a lot of cleaning up to do. I think we'll start on that.

SCHWEICKART Okay, Skylab, Houston. We do have one thing that does look mandatory here to get our momentum back in shape. We need a nominal H cage of 52023 at 20:25, and that is moderately time critical.

PLT Okay, nominal momentum H cage at 20:25.

SCHWEICKART That's affirmative, 52023.

SCHWEICKART Okay, Skylab, we've got about 1 minute to LOS here at the Vanguard. We're going to pick up the Hawaii at 21:14. And just for general information, we've got something like 66 minutes of real time data on that EVA. And the average metabolic for you people is 1080 and for Joe, it was 1700. And Pete, I'd say we designed the EVA the right way.

CDR Yeah, right.

CDR Yeah, Roger. When we have time this afternoon, we'll debrief the EVA. I can tell you what a difference it was between the water tank and up here. That's why it took us longer.

SCHWEICKART You got the job done, we don't care.

CDR Well, we got the job done and only for one reason, and that's because Joe asked for the end of the double and long tether up and keep himself anchored. If he hadn't been able to anchor himself we wouldn't been able to do it. And I think the difference is that the (garble) in the water between the pole and you, you're hanging on makes a difference because I bet he keeps splashing around (garble) - -

PAO This is Skylab Control. Greenwich mean time 20 hours 16 minutes. We have had loss of signal at the Vanguard tracking station. The crew has been advised to just cool it according to astronaut Rusty Schweickart. They've been told eve yone down on the ground is shaking hands. You did a dandy job, everybody is pleased. The crew has been advised to eat lunch and take it easy, and they will be talked to again as the spacecraft comes back over Hawaii in 57 minutes. The assessment on the ground and

SL-II MC-654/2
Time: 15:10 CDT 14:20:10 GMT
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as concurred in by Commander Conrad is the problem with the MOLE SIEVE fans i. likely that they froze up when the air-lock module hatch opening was opened. Commander Conrad reported the S082 film was successfully recovered, S054 door was pinned open successfully. And at this time Greenwich mean time 20 hours 17 minutes, this is Skylab Control.

END OF TAPE

SL-II MC-655/1
Time: 15:27 CDT 14:20:27 GMT
6/7/73

PAO This is Skylab Control. Greenwich mean time 20 hours 27 minutes. Dr. Zeiglschmid reported to Flight Director Milt Windler on the last pass that the BTUs, the metabolic rate, in other words, the workload, work rate produced by Commander Conrad and Science Pilot Joseph Kerwin were as follows. Commander Conrad average rate was 1,080 BTUs versus the Science Pilot 1700 BTUs. This compares favorably to the workload that Commander Conrad had during the Apollo 12 extra-vehicular-activity on the moon. At the close of the EVA number 1, when Commander Conrad was ingressing the Lunar Module on the lunar surface he had 1300 BTUs. When he ingressed on EVA 2, he registered 1500 BUTs. Dr. Zeiglschmid reported that the average of 1080, the average was 1,080 for the EVA here today, and he had peaks as high as 1400 during the several hours they spent outside the spacecraft. Preliminary assessments on the ground show that the deployed solar array panel is now producing, between eight and nine hundred watts. The maneuver was made, the pitchup, and assessment is now that we will probably pitch down the vehicle as we pass over the Hawaii tracking station in 45 minutes. At Greenwich mean time 20 hours 29 minutes, this is Skylab Control.

END OF TAPE

SL-II MC-656/1
Time: 15:36 CDT 14:20:36 GMT
6/7/73

PAO This is Skylab Control. Greenwich mean time 20 hours 35 minutes. William C. Schneider, Director of the Skylab Program, Mr. Leeland Belew, Program Manager from Marshall Space Flight Center, and Mr. Kenneth Kleinknecht, Skylab Program Manager for the Johnson Space Center are scheduled to begin a press conference in the Building 1 News Room immediately. And Dr. Royce Hawkins and Astronaut Rusty Schweickart are in route from the Mission Control Center to the press conference. We will take the line down and during the Hawaii and play any air to ground at the close of the press conference. Skylab Control at Greenwich mean time 20 hours 36 minutes.

END OF TAPE

SL-II MC-657/1
Time 16:35 CDT, 14.21:35 GMT
6/7/73

PAO This is Skylab Control, Greenwich mean time 21 hours 35 minutes, during the press conference conducted in Building 1,wehad a pass over the Hawaii tracking station which ran about - approximately 7-1/2 minutes during which time Commander Conrad discussed the procedures passed up by Rusty Schweickart for the EVA, he said the procedures were just super. we'll play that tape now and hold the line up for the pending Van - Vanguard pass.

CC Skylab, Houston, we're AOS Hawaii for the next niner minutes and we should be dumping at data recorder at this pass.

CDR Hello, Crip. Roger.

CC Rusty gave it back to me.

CDR Hurray, maybe we won't get so many changes.

PLT Hey, Crip, I'd like to do something about these MOL SIEVES. I mean - the status right now is that, our outlet temperatures come up. Apparently it was frozen. We didn't have the line blocked in there due to freezing. I just went up and ran both the PRIMARY and SECONDARY fans on MOL SIEVE A. It runs all right. However, the present configuration is, as you probably know, is that most MOL SIEVES are shut down right now. Both fans are off.

CC You got both - both fans off?

PLT Fans are off and both MOL SIEVES.

CC Roger. But uou did try the one and A?

PLT That's right and the selve flow light does not come on anymore and it doesn't make that noise anymore. As Pete said, I think it was the fan stalling out as they were flowing into the - into a blocked pipe.

CC Stand by 1 on that, Paul.

CDR (Music) You can see we're settling to a rather normal operation again.

CC Rog, sounds like we're right at home.

CDR Say, Crip, I would like to have your pass on. (Music) Rusty, and those guys procedures as far as getting that staff panel up works super including the directions - make all the gear and everything. I was a little disturbed with all the late ATM changes and I wish those guys - research their subject matter a little more thoroughly before they send it up so - because when you send up those split-up pads, there's no way we can keep them by message number. We got them going to the guy that they belong to and - and message numbers to us are meaningless and gee things were such a jumble, I was getting all nervous that something was going to get goofed up. So if we do it again, I guess my feeling is that if we say we're ready to go EVA the next day and the ground says okay and then I assume their ready to go the next day and that means everybody. If the ATM guys need to dust up those procedures.

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CC Roger, we copied. Also, I guess you probably realize that on that last one we sent you up there in a hurry we got the pages scrambled around, and with that was probably was confusing.

CDR And I tell you another thing, and it really helps the next time we do something like that. If you ever decide that you got to make changes, I'd rather have you send us one, clean, big, super long teleprinter message that's in the proper order than what happened to us because man, we had pages cut out and pieced together and we got lost and there was no way we could handle that. Now, it's my thinking, this morning would have been, first thing, is to put it all together, send it up one big long string, so I'll be getting the situation, bits and pieces of stuff, forget it. I'd rather have you hold them and send it one great big long message, we'll understand it quicker than the way it came through last couple days.

CC Roger, we copy, Pete. While I've got you here, we did have a question on the way to SAS panels came out. We'd like to know whether they jumped out to about to where they ended up or did they jump out and then ease on out?

CDR (Laughter) I'm sorry you asked that question. I was facing away from it, heaving with all my might and Joe was also heaving with all his might when it let go and both of us took off and by the time we got ourselves under control and back down and around the spacecraft some place again, (garble)already out locked, so I can't answer that question for you. By the time we got settled down and looked at it, those panels were out as far as they were going to go at the time. Now, the cords are out a lot further than they were when it was folded, I want you to understand that, but they did come out. All three of them came out and some degree more than where they were folded along side the vehicle.

CC Okay, we copied that. Can you give us an idea of a time estimate before you got a change to look out after you pulled it?

CDR Oh, not too long, I guess 15, 20 seconds and they come down to the extend that they were going to come at that point, I guess.

CC Okay, copy that. Thank you.

CDR Do you have any - any indication of - of percent extention on the ground or you don't get that kind of (garble) - -

CC About 30 percent on I believe, on the inner one and about 40 percent on the other two.

CDR Okay, there is no indication that they are moving at all slowly or anything like that?

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Time: 16:35 CDT, 14:21:35 GMT
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CC Negative, it doesn't appear to be maneuvering right - moving out right now. We at this state that their frozen up,of course, and that's why we're sending up this attitude trying to - trying to fall out a little bit.

CDR Well we got another 14 days you can send Rusty back to Huntsville and we'll be glad to goout and pull those out for you.

CC I don't think we'd like to sit with the way it is for awhile and see what happens.

CDR Okay, that's all right with me.

CC And, PJ - regarding your MOL SIEVE fans, we'd like to go ahead and leave them OFF until our Vanguard pass. We are coming up at 21:44.

CC Skylab, Houston, we'd like to leave the MOL SIEVE fans OFF until our next pass at Vanguard and we'll take a look at it then and make a decision about turning them off if it still appears that that loops pretty cold. Also we're going to initiate a small maneuver here which makes up for - correction scrub my last - we will not be doing the maneuver and we're about 30 seconds to LOS and we'll see you again at Vanguard at 21:44 - 21:44.

PLT Okay, I understand. Do you want to leave that fans off for awhile, yet, huh. What did you say was pretty cold?

CC Rog. It's the secondary coolant loop that's pretty cold on it, Paul.

PLT (garble) it seems to me would power up the heat exchangers in the MOL SIEVE, it might help though, huh? You guys know that, okay, we'll wait for you at Vanguard.

CC Okay, we'll just - hold it where it is right now and take a look at it at Vanguard.

PLT Yes, I noticed that we got a - mol - mol lights on - -

END OF TAPE

SL-II MC-658/1
Time: 15:43 CDT 14:21:43 GMT
6/7/73

CC Skylab, Houston. AOS over the Vanguard about the next 9 minutes.

SPT Roger, Houston. We have the CDR's suit on suit drying and we assume that 10 hours is still a reasonable time. And I guess at the end of that time we plan to put the same dessicants back in too, unless we hear different.

CC Joe, I missed you last there, would you say again please?

SPT Right. At the end of the drying time, we plan to put the same dessicants back in unless we hear different from you.

CC Okay, we copy. And I've got the PLT available, I'd like to give him some words on his MOL SIEVE.

SPT He's coming, he's coming.

PLT Go.

PLT Go ahead, Bob.

CC Okay, we'd like you to go to panel 203 and turn the SIEVE A timer OFF. Then we'd like you to use the T handle, panel 228. Place the ABSORB BED to DESORB. We want them both on DESORB. And we want you to go panel 203 SIEVE A fan power switch to PRI, and after 1 hour panel 203 take the timer back to SECONDARY.

PLT Okay, so you want to leave, you want to run the fans and leave the SIEVE open desorb for an hour.

CC That's affirm.

PLT Okay.

PLT Hey, Crip, do you want us to put the dissicants in the vacuum dryers while we're drying the suits?

CC Joe, we don't want you to power anything up on that suit drying until we give you a go because of the attitude that we're holding. We don't have the power for it.

SPT Understand that and we will hold the blower. However, we're not going to heat the vacuum of it, so I wondered if it would do any good just to put the dessicants in and treat them the way we do the feces?

SPT We could leave them in 24 hours each, I guess.

CC Okay, I'm trying to get the word on that for you, Joe.

SPT Okay.

CC And Skylab, Houston. We're going to be doing a small attitude maneuver here to get it squared away per momentum and power, and we'd like you to stay off the DAS for us for a while.

SPT — You bet.

CC — Joe, on putting the dessicants in drawers 5 and 6, I guess we don't really see any problem with it. You can go ahead and put them in there without power on that. It might help. We would also like to verify that we did get the EVA docking lights out.

SPT — Roger.

SPT — We're pretty sure we did, and Paul is going to doublecheck the docking lights.

CC — Okay.

SPT — Did we do any good on temperatures?

CC — Say again about temperatures.

SPT — Did we do any good on panel temperatures?

CC — They came up slightly.

CC — Okay, Rog. Panel number 1 the outer most is out to about 80 percent right now.

SPT — Ho, ho.

CC — Feel like you're flapping your wings?

SPT — Yeah. We must be at a pretty good angle then, huh, because the array amps don't show it. We are only feeding batteries that are already charged right now.

CC — Yeah, we've got you cocked up about 45 degrees so they are getting the normal Sun anyhow.

PLT — Yeah, okay.

END OF TAPE

CC - 5 degrees so that they aren't getting the normal Sun anyhow.
PLT Yeah, okay.
STP Hey, Crip. You say you wanted both BEDS in DESORB or both BEDS in STORAGE? You said DESORB, right?
CC DESORB, affirmative.
SPT When the hour's up, how about letting me play with the primary timer and see whether that's working or not?
CC Okay, I think we'd probably like to save that for awhile.
SPT You don't trust me.
CC And is the CDR available for a question, please.
CDR At your service.
CC Rog. Stand by one, Pete, but I guess this is for whoever needs to monitor, but we passed you up some procedures for post ZLV regarding monitoring the ATM batteries, and we would like you to use those for us.
CDR You're talking about the ones if we get six batteries off the line throw the BATS ON, and if we get like BAT chargers or (garble) do so and so and so and so.
CC Yes Sir, that's it.
CDR Okay, we have that prominantly displayed on the ATM console and if they start showing off the line, we'll holler for help and do something.
CC Oh -
CDR The way I read that that was after we went into nighttime. Is that correct? After you've been out in the daytime?
CDR Hello.
CC Stand by one.
CC I'll get an answer on that one for you shortly, Pete. We are gonna go LOS here in about 1 minute and we'll see you again at Hawaii at 22:51. And that monitor is during the nighttime.
CDR Right. Right after we go 'nto night, we'll pick her up.
CC Roger, and for P. J. if you're listening. Still, please, on panel 207, we'd like to get REG 1 and 2 POT ADJUST turned clockwise 15 degrees.
PLT Clockwise 15 degrees. You want to put them all on the line, huh?
CC We're going to try to pick some of the load with the OWS wings.
SPT Hey, we got PCG current. How about

that? First time in 15 days.

CC That work paid off. And Skylab we need a compensate at 22:22.

CC Skylab, Houston. Did you copy my last?

PAO This is Skylab Control. Greenwich mean time 21 hours 54 minutes. As the Skylab space station passed over the Vanguard tracking ship a happy group of Johnson Space Center management personnel headed by Dr. Chris Kraft, watched the displays at the Mission Control Center, as the wing number 1 slowly deployed. It was 80 percent when the Skylab space station began it's pass over Vanguard. It went from 80 to 90 percent deployed in the wing number 1, which is the outboard wing of the 3 wing panel that was deployed today by the crew. The other two panels, number 2 panel is presently 40 percent deployed, and number 3 panel is 29 percent deployed. Science Pilot Kerwin remarked to the ground during this pass. "We finally got PCC current. First time in 14 days" PCC is the power conditioning group of the orbital workshop power supply, similar to the CBRMs of the ATM power supply. We've had loss of signal over Vanguard tracking station. Our next pass is over Hawaii in 55 minutes. This is Greenwich mean time 21:55. This is Skylab Control.

END OF TAPE

SL-II MC-660/1
Time: 16:59 CDT 14:21:59 GMT
6/7/73

PAO This is Skylab Control. Greenwich mean time 21 hours 59 minutes. Prior to the Vanguard pass the spacecraft attitude was changed. It was put in 45 degree pitchup following the EVA. It has been lowered slightly to 40 degrees. This means that the CSM portion of the vehicle is facing 40 degrees up towards the Sun. We will have acquisition at the Hawaii tracking station in 51 minutes. This is Skylab Control at Greenwich mean time 21 hours 59 minutes.

END OF TAPE

SL-II MC-661/1
Time: 17:49 CDT 14:22:49 GMT
6/7/73

PAO This is Skylab Control. Greenwich mean time 22 hours 49 minutes. Acquisition at Hawaii tracking station is expected momentarily. Capcom is still Astronaut Bob Crippen, who was the Commander of the Skylab support crew which performed the Skylab medical experiment altitude test last summer which went through all the medical protocol and operated the medical experiments which are now being used aboard Skylab. The crew should be still performing post EVA activities and ending their day. We'll have live air to ground. We'll leave the line up now.

CC Skylab, Houston. We're AOS over Hawaii for the next 7 minutes.

PLT Hello, how are we doing?

CC Pretty good. Looks like you did get that nominal H cage in, I called just as we're going over the hill. I was worried about it.

PLT Yeah, we got it.

CC Very good. You guys do good work. I've got some word on your primary coolant loops that I'd like to feed up to you.

PLT Go ahead.

CC Okay. It appears to us that TCV Bravo has failed in the full cold position. And we do not want you to activate the primary coolant loop. If the secondary coolant loop caution and warning occurs, what we'd like you to do is go set cool temp low, if that's the light you get to go to press on SECONDARY.

PLT Wait a minute, Bob, I didn't follow that last. Say your last two sentences again.

PLT What do we do if we get a SECONDARY coolant temp low light?

CC Just stay on the SECONDARY loop.

PLT Okay.

CC Okay. If you go to get a set cool flow light we want you to go to INVERTER 3 PUMP Charlie.

PLT Okay. Now we got control of both loops onboard. Do you want to leave it that way?

CC Rog, we'll leave it that way for right now.

PLT Okay.

CC You might be interested to know that section 1 of the SAS wing is out 100 percent now.

PLT Yeah, we've got a visual verification on that.

CC And section 3 has started to move.

PLT Yeah, let's hear it for section 3.

SPT Super.

CDR Crip, there is a possibility that meteoroid

panel could have damaged part of section 2, because that's pretty well underneath where it tore off and passed underneath the panel.

CC Roger, we copy. And it has not moved since we first observed it.

CDR Yeah, I've been looking at it and I keeping thinking I see it osillating just a entsiest bit, like it's trying but it's not moving. I can see number 3 completely and it's flat as a pancake out there. I can see about the first 3 rows of number 2.

CC Okay.

SPT Hey, Bob, number 2, the middle section is the one that split up and feed all APCGs, right?

CC Stand by one on that, Paul.

PLT Okay. I think, correct me if I'm wrong. The inboard section feeds 1 through 4, the outboard feeds 5 through 8, and the middle one is split up to feed all 8.

CC We don't have a ready answer for you on that, we're checking it.

PLT Okay, no rush.

CDR Tell me about that coolant loop problem. I didn't quite hear that, Bob.

CC Well, we think we've got a valve failed in the full cold position. That's TCV Bravo failed in the full cold.

CDR Is there anything we can do about it?

CC No, we're working on a procedure right now. There's nothing you can do now.

CDR Okay, very good.

CC And Paul reguarding your question on which PCG the SAS section - -

END OF TAPE

SL-II MC-662/1
Time: 17:55 CDT, 14:22:55 GMT
6/7/73

CC Now, there is nothing you can do now.
CDR Okay, very good.
CC And Paul, regarding your question on which TCCs the SAS sections feed, you are correct.
PLT Okay, thank you.
CDR They also be advised if we did get a PPCO2 high light here a little while ago with the sieve off with out taking any out and it's reading about 55 out.
CC About 55 out on CO2.
CDR Yes.
PLT Yeah, but A's has been reading higher than B the whole flight.
CC Okay, copy. And Pete, I've got a time line question I'd like to ask you here, if you got a minute.
CDR Go ahead.
CC Okay, not tomorrow but the day following that, day 160 would you like to know whether you would consider getting up 1 hour early so that we can swap out S073 to put in the ETC for EREP pass?
CDR Sure. Do they get up earlier or everybody?
CC It would be everybody.
CDR Now, if it's everybody, sure.
PLT Why ETC?
CDR That's provided you let us go to bed an hour earlier the night before. S009 at 224021 or whatever it is.
CC Well, we got a summery time line and that we should be shipping you this pass but it doesn't reflect that, it just calls for you to stay up as late as you normally do, so I guess we'll take a look at it.
CDR No, no I'm just pulling you're leg, Crip. Hand it up, we'll do it.
CC You guys are - you guys are too enthusiastic.
CDR We figure SL-III and SL-IV is going to owe us a few more.
CC I think they are. They owe you quite a bit right now.
PLT Hey, Crip, the CDR mentioning S009 job my memory, guess what I missed?
CC Did you forget - -
CDR 009 - -
CC We'll let it go this time, Paul.
PLT No, go ahead and ship it up. I'll get it as soon as you get a new one figured out, ship it up.
CC Okay. By the way, you can go ahead and go back to timer SECONDARY on MOL SIEVE A at this time.
PLT I was just on my way up, don't to it yet, Pete.
CC Okay, I won't.
CDR Listen, Crip, the other thing is can you give me an idea how many revs you going to run this way?

SL-II MC-662/2
Time: 17:55 CDT, 14:22:55 GMT
6/7/73

CC I'll see if we can get back for you on that, Pete. We're going to go AOS here in just a few seconds, then we'll see you again at Vanguard at 23 - 23.

CDR 23:23. Okay - -

PAO Skylab Control, Greenwich mean time 22 hours and 59 minutes. We've lost the signal over Hawaii tracking station. Command - CAPCOM Robert Crippin report to the crew that the ground has confirmation that - that section 1 of the solar - solar array panel on the workshop has deployed 100 percent. Spacecraft Commander Conrad affirmed that by saying visually that he could see the same thing up there. Section 3 - section 3 is the one that is deployed 100 percent. Section 2 the middle panel is deployed presently at 39 percent. And Section 3 the closest to the - closest to the vehicle is deployed presently, only 32 percent. As Skylab crosses over the South Pacific with acquisition scheduled over Vanguard in 22 minutes, this Skylab Control at Greenwich mean time 23 hours.

END OF TAPE

SL-II MC-663/1
Time: 18:03 CDT 14:23:03 GMT
6/7/73

FAO This is Skylab Control, 23 hours 3 minutes. To clarify the last announcement, wing number 1, the outboard wing, is the wing that is - the section of the wing that is fully deployed, 100 percent. Wing number 2, section number 2, is presently 40 percent deployed. Section number 3, the closest to the inboard panel, is presently 31 percent deployed. We will have acquisition at Vanguard tracking station in 18 minutes.

END OF TAPE

SL-II MC-664/1
Time: 18:18 CDT 14:23:18 GMT
6/7/73

PAO This is Skylab Control, Greenwich mean time 23 hours 19 minutes. We will have acquisition of the Skylab vehicle as it crosses the Vanguard tracking station. In previous discussions over the Hawaii pass, the ground advised the crew that apparently there's a malfunction in the coolant loop system aboard the spacecraft. Apparently there is an open valve in the primary coolant loop, and what the crew has been advised to do is shut off the primary pump on the primary system. They are now using the backup, the secondary coolant system, and will begin troubleshooting the problem on the ground to pass up an operation to the crew, hopefully to correct the problem in the primary loop. We anticipate conversation with Capcom Hank Hartsfield, and the Skylab crew.

CC Skylab, Houston through Guam - through Vanguard for 8 minutes.

CDR Hello, Houston.

CC Hello there, you guys did a great job today.

SPT Well, we had a good time. Just been monitoring the BPS up here, Hank, and from our onboard displays, we got 12 charge completes during the night, but all the battery voltages appear to be okay. Do you guys agree?

CC Roger. We concur and we notice also, that those sections of the SAS are still creeping out.

SPT Good. What are your latest percentages?

PLT Do you show any movement on section 2 now, the middle section, Hank?

CC That's affirmative. We're showing it about halfway out and section 3 about 34 percent.

PLT How about that.

CC It looks like we're gonna want to stay in this attitude for at least one more rev.

PLT Good show.

CDR We got a full state of charge on the - looks like on the 4 battery, 5, 6, 7, and 8 on the AM slot.

CC Skylab, Houston. Have we got somebody in the STS?

CDR No, but we can get somebody up there.

CC Okay. What we'd like to do is get the RATE 2 ADJUST clockwise 15 degrees, and for info our power does look good enough to stay here one more rev.

CDR Gonna stay here one more rev?

CC That's affirmative, at least -

END OF TAPE

SL-II MC-665/1
Time: 18:26 CDT 14:23:26 GMT
6/7/73

CC Okay. what we'd like to do is get the reg to adjust clockwise 15 degrees and for info our power does look good enough to stay here one more rev.

CDR We're going to stay here one more rev?

CC That's affirmative, at least one more rev. And we want reg 2 adjust clockwise 15 degrees.

CDR That's fine with us Hank. As long as those panels keep coming out, we'll stay here as long as you want.

CC Roger.

CDR What kind of a flight plan you got for us tomorrow?

CC It should be in the teleprinter now Pete.

CDR Okay, I didn't get enough exercise today, so I'm talking to you while riding the bicycle.

CC You're kidding.

CDR No, I'm not kidding.

CDR Only my arms and hands got a workout out there. My legs didn't get any.

CC While you're on the subject there, what did you cut the bolt with?

CDR We cut it with the cutter.

CDR See what happened was is we hauled in on the cutter as hard as we could and nothing happened. So I said well let me go out the pole and look and see what happened. And I got about 2/3 of the way out the pole and bango it decided to let go all by itself and whango the thing blew up, along with me the pole and the big BET.

CC That's a Roger.

CDR We had quite a wild ride when we broke the strap too, or broke the damper both Joe and I were even on the BET when it let go, and by the time we came down from out whipperdills both of us (garble)

CC That must have been a good ride.

CDR I'm sorry we didn't have movies of it.

CDR You guys have a feeling we'll get off free fully extended?

CC Roger, looks like they're going to go all the way out Pete. We're confident they will.

CDR Hey, that's the best news I've had all day. I thought really maybe that number 2 got damaged because that's the one that has the stuff piled up underneath it.

PLT Number one on the popularity pole for extra power is the head water heater.

CC Roger, copy.

CDR We have a head water heater and more lights so we can stop living like the mole in Dick Tracy.

SL-II MC-665/2
Time: 18:26 CDT, 14:23:26 GMT
6/7/73

CC Roger, we'll work on it.
SPT Also, how about having somebody think about if we can use the wardroom window heater (garble) get rid of our friendly ice spots.
CC Copy.
CC Skylab, Houston. We're about 30 seconds from LOS. Ascension will be coming up at 38. And at this time wing - or section 2 is 60 percent and section 3 is 47 percent.
CDR Hey, that's great.
PAO This is Skylab Control, Greenwich mean time 23 hours 32 minutes with loss of signal at the Vanguard tracking station. The crew was passed up additional good news as CAPCOM Hank Hartsfield told the crew that section 2 of the orbital workshop wing is now 60 percent deployed and section 3 is 45 percent deployed. The crew was advised the ground is of the opinion that all three sections will be fully deployed shortly. In the last rev, section 2 and 3 went out at least 15 to 20 percent more than they were when they last passed over Vanguard. We will have acquisition at Ascension tracking station in approximately 4 minutes. We'll leave the line up for that pass and at 6:45 in the Building 1 newsroom we will have Flight Director Milton Windler and the EGIL for the change of shift briefing. Here at the Mission Control Center, Flight Director Neil Hutchinson and his silver team is taking over from Milt Windler's maroon team for the evening shift. As the power problem is improving with deployment of the orbital workshop solar array, Commander Conrad said "Looks like we can turn more lights on and stop living like the mole in Dick Tracey's comic strip." The vehicle will remain in its present attitude at approximately 45 degrees pitch-up. Pitchup of the CSM pointing upward toward the Sun. We anticipate acquisition at Canary. We'll leave the line up for any conversation.

END OF TAPE

SL-II MC-666/1
Time: 18:35 CDT 14:23:35 GMT
6/7/73

CC Skylab, Houston through Ascension 5-1/2 minutes.
PLT Hello, Houston.
CC And for infc, we're going to do a Z-axis maneuver of about minus 10 degrees to square away the momentum.
PLT Permission granted.
CC Thank you sir, and I also have a S009 pad for Paul.
PLT Come ahead with it.
CC Okay, the new reset time is 002306 and period in the Beta the same. Period 120. Beta plus 1.
PLT Okay. 002306.
SPT Hey, Henry; I have a question on the condensate tank dump heater.
CC Okay, shoot.
SPT If the temperature gage reads operate for one heater, is it gonna read operate for the other, or do you switch detectors when you switch heaters?
SPT That's all right. I don't need an answer now. I'm just wondering. The reason that was reported as filled was because it was left on 20 minutes and the temperature reading never came off the peg. I noticed on the list of anomalies that if the sections of that heater are still good, and I wonder if there isn't a way that we can determine whether it's still good or not. Such as going up and turning it on for awhile.
CC Okay. Let's see if we can get an answer on that.
SPT Okay.
CC Okay. I guess we think we can do that. But, we would like to wait a little later to try it. Also I have there was an omission in the Commander's details for this evening and in presleep, we would like for him to do housekeeping C and 2. That's the fuel cell purge.
SPT Okay. C and 2. That's both hydrogen and oxygen. (garble)
CC We had a momentary dropout on voice. That's just oxygen.
CC Skylab, Houston. I have a couple of messages here for you. Is everybody listening up?
CC Skylab, Houston. How do you read?
SPT Are you still there, Houston.
CC Roger. How do you read: We had a loss of voice there I think.
SPT Yes, just for a minute. Well, the PLT is shaving and the CDR went by and said "You've been a good boy this week Paul, you can have the Command Module tonight."

SL-II MC-666/2
Time: 18:35 CDT 14:23:35 GMT
6/7/73

CC Roger. Copy. Everybody listening up?
PLT Yeah.
CC Okay, I got a message I'd like to read up to you. It's to Skylab Commander Conrad. On behalf of the American people, I congratulate and commend you and your crew in your successful effort to repair the world's first true space station. In the two weeks since you left the Earth, you have more than fulfilled the profacy of your parting words. "We can fix anything." All of us have new courage now that man can work in space to control his environment and improve his circumstances and exert his will, even as he does on Earth. Signed, Richard Nixon.
CDR Then I'll thank you from all of us.
CC I have another one that's to Skylab Commander Conrad. My warmest personal congratulations to you and your crew. We're all proud of your team, the NASA team, and the whole aerospace team. I know I can speak for citizens everywhere when I offer you our heartfelt best wishes for the rest of your mission. Signed, Spiro T. Agnew.
CDR Well, thanks again.
CC And we're just about LOS. Guam will be coming up at 22.
CDR Roger.
CC And reminder. Guam is your medical conference.
PAO This is Skylab Control. Greenwich mean time 23 hours 45 minutes. We have had loss of signal over the Ascension tracking station. The previous pass highlighted by two congratulatory messages. One from President Richard Nixon, and the second from the Vice President Spiro T. Agnew. During this last pass the section 2 and section 3 of the orbital assembly solar array further deployed. Section 2 now stands at 79 percent deployed, section 3, 69 percent deployed. We will now switch to the NASA news room in building 1 for a change of shift briefing, with Flight Director Milt Windler. We'll hold the line - bring the line back up over Guam - no we won't either. We'll hold the line until the change of shift briefing is concluded. This is Skylab Control, 23 hours 46 minutes.

END OF TAPE

SL-11 MC-667/1
Time: 18:51 CDT 14:23:51 GMT
6/7/73

PAO This is Skylab Control, Greenwich mean time 23 hours 51 minutes. The previously scheduled change of shift briefing with Flight Director Milt Windler has been cancel.ed. There will be no change of shift briefing with Flight Director Milt Windler. This is Skylab Control, Greenwich mean time 23 hours 51 minutes.

END OF TAPE

SL-II MC-668/1
Time: 19:20 CDT 15:00:20 GMT
6/7/73

PAO This is Skylab Control. Greenwich mean time 00:20 minutes. We will have acquisition, a brief pass over the Guam Island tracking station shortly. This is the regularly scheduled medical conference between the crew and the flight surgeon. The flight surgeon on duty tonight is Dr. Charles Ross. We will have a summary of that conversation immediately following the pass. We'll hold the line up for that pass in the event the crew does talk with the Capcom, astronaut Hank Hartsfield.

PAO Skylab Control, Greenwich mean time 00:28 minutes. We've had loss of signal over the Guam Island tracking station. Flight Director Neil Hutchinson called attention to his flight controllers. We have a hundred percent on all sections of the solar panel number 1 deployed today by Commander Pete Conrad and Science Pilot Joseph Kerwin. If all PCGs, the power conditioning groups of the airlock module through which the power from the solar array is passed through, if all these PCGs come on line. We will have an additional 2,000 watts to the approximately 4,000 already being produced as a result of the Apollo telescope mount solar array, which was deployed on the first day of launch, and has been providing the necessary power since the crew arrived at the Skylab space station on May 25th. Next acquisition over Vanguard in 30 minutes. At Greenwich mean time 00:29 minutes, this is Skylab Control.

END OF TAPE

SL-II MC-669/1
Time: 19:57 CDT, 15:00:57 GMT
6/7/73

PAO This is Skylab Control, Greenwich mean time 00:57 minutes. As Skylab approaches the Vanguard tracking station on its 351st revolution of the Earth. We have Capcom Hank Hartsfield scheduled to talk to the crew. We'll leave the line up for any conversation.

CC Skylab, Houston. Through Vanguard 10-1/2 minutes.

SC (garble) would you believe that, all of them.

CDR Yeah, but it's not like being (garble)

CC Roger, we concur. We're showing them all three 100 percent, and we're starting to command you back to solar inertial.

CDR Super-duper man (garble) charge up batteries and batteries and all that sort of stuff.

CDR You there, Houston?

CC Roger, we're dropping in and out of comm now.

PLT Okay, let me know when it's going to be good for a while.

CC Okay, I think we got good comm now.

PLT Okay, Hank, on S009 I did not get a good initiate on it, because that stinking thing is running wrong again. And I should have remembered, but I didn't. I went to RESET, left the power ON. As I'm sitting there, seconds before I'm ready to do my big thing with it, it started opening, with it in RESET. So I got a data point and if you want to send up another RESET - reinitiate, I'll do it for you. It went fully open, did not fully open at - let me see what I was supposed to do it. I was supposed to start it at 23:06. It got fully open at 23:12.

CC Roger, copy.

PLT That's 00:23:12.

CC Okay, what we'd like for you to do is close the package, Paul, and try a RESET at 01:56:16.

CDR Okay, what did you say again? The time of RESET, please Hank?

CC Roger, 01:56:16 and that's the initiate time.

CC And we'd like, of course, to get the package closed at this time. And also, if I can get somebody up in the STS, we've got a few switches we'd like to get reconfigured. I think the easiest way is for me to just read them off, and have you do them.

CDR Okay, we got somebody headed up that way right now.

CDR Hank, if you've got a moment.

CC Go ahead.

SL-II MC-669/2
Time: 19:57 CDT 15:00:57 GMT
6/7/73

CDR Why don't I give you all of the evening status report except for meals because we haven't yet, and we're going to in a minute. We didn't eat until about 20:30, so nobody is quite hungry yet. Well, let me give you the photo stuff for today.

CC Go ahead.

CDR It's very little. We had no 16 millimeter. We had 35 millimeter, CI26 frame counts 31. CI34 frame counts 20. ZX06 on the 70 millimeter frame count is 40. Let me give you the (garble) status. A1 is transporter 02. With Charlie India, 05, 60 percent. Charlie India 01 is a take up A2, is 0 - -

END OF TAPE

SL-II MC-669/1
Time: 19:57 CDT, 15:00:57 GMT
6/7/73

PAO This is Skylab Control, Greenwich mean time 00:57 minutes. As Skylab approaches the Vanguard tracking station on its 351st revolution of the Earth. We have Capcom Hank Hartsfield scheduled to talk to the crew. We'll leave the line up for any conversation.

CC Skylab, Houston. Through Vanguard 10-1/2 minutes.

SC (garble) would you believe that, all of them.

CDR Yeah, but it's not like being (garble)

CC Roger, we concur. We're showing them all three 100 percent, and we're starting to command you back to solar inertial.

CDR Super-duper man (garble) charge up batteries and batteries and all that sort of stuff.

CDR You there, Houston?

CC Roger, we're dropping in and out of comm now.

PLT Okay, let me know when it's going to be good for a while.

CC Okay, I think we got good comm now.

PLT Okay, Hank, on S009 I did not get a good initiate on it, because that stinking thing is running wrong again. And I should have remembered, but I didn't. I went to RESET, left the power ON. As I'm sitting there, seconds before I'm ready to do my big thing with it, it started opening, with it in RESET. So I got a data point and if you want to send up another RESET - reinitiate, I'll do it for you. It went fully open, did not fully open at - let me see what I was supposed to do it. I was supposed to start it at 23:06. It got fully open at 23:12.

CC Roger, copy.

PLT That's 00:23:12.

CC Okay, what we'd like for you to do is close the package, Paul, and try a RESET at 01:56:16.

CDR Okay, what did you say again? The time of RESET, please Hank?

CC Roger, 01:56:16 and that's the initiate time.

CC And we'd like, of course, to get the package closed at this time. And also, if I can get somebody up in the SIS, we've got a few switches we'd like to get reconfigured. I think the easiest way is for me to just read them off, and have you do them.

CDR Okay, we got somebody headed up that way right now.

CDR Hank, if you've got a moment.

CC Go ahead.

SL-II MC-669/2
Time: 19:57 CDT 15:00:57 GMT
6/7/73

CDR Why don't I give you all of the evening status report except for meals because we haven't yet, and we're going to in a minute. We didn't eat until about 20:30, so nobody is quite hungry yet. Well, let me give you the photo stuff for today.

CC Go ahead.

CDR It's very little. We had no 16 millimeter. We had 35 millimeter, CI26 frame counts 31. CI34 frame counts 20. ZX06 on the 70 millimeter frame count is 40. Let me give you the (garble) status. A1 is transporter 02. With Charlie India, 05, 60 percent. Charlie India 01 is a take up A2, is 0 - -

END OF TAPE

SL-11 MC-670/1
Time: 20:04 CDT 15:01:04 GMT
6/7/73

CDR Give you a door status. A-1 is 3-1/4 02, with Charlie India 05; 50 percent. Charlie India 01 is a take up. A-2 is 03 is the transporter. Charlie India 06; 99 percent, Charlie India 03 is the take up. A-3 is 04. Charlie India 04; has 25 percent remaining on it. Mike Tango 01 is the take up. That reel is jammed and we've got no instructions on it. We'd like to clear it. A-4 has 05. PI 25; 100 percent. FT11 on it, and that's the film for today. You know what the flight plan was. We're working 009. The stowage is per the checklist as far as we have gotten. We're still holding on completly re-configuring. We're also holding on powering up suit drying. Which we need to get an input on, and we'd like to get that on tonight if the bat situation looks good enough And stowage is pretty much as it should be. I can't think of anything right now that we haven't either notified you about on S channel or that is out of configuration.

SPT And the SPTs ready for switches.

CC Roger. Copy. The first one's on panel 216, Joe. We'd like to get the VENT VALVE OFF, VENT HEATERS OFF, and the CONDENSATE TANK PRESSURE VALVE CLSED. That's on your condensate tank there.

SPT In work.

SPT Okay.

CC Okay, on panel 203, under molecular sells, we'd like to get the SIEVE 3 fans to SECONDARY.

SPT It'll work.

SPT That's complete, and Henry, I should point out that the condensate tank switches were all in the called for position already.

CC Okay, thank you. These are just verifies, to know we're in the right mode. Okay, also on panel 203, we want to get the PRIMARY and SECONDARY COOLANT LOOP INVERTERS OFF - those two inverter switches off momentarily, and then to COMMAND.

SPT OFF and then COMMAND, on both of them.

CC And you'll probably get a C & W when you do that. Well, I guess maybe not, until we command them on.

SPT That's complete.

CC Okay, on panel 200, Joe, the RAD FLOW PRIMARY circuit breaker, we want CLOSED.

SPT RAD FLOW, FLOW PRIMARY.

CC And when you get that, back on panel 203, we'd like to get the RAD FLOW PRIMARY switch to COMMAND.

SPT Circuit breaker is CLOSED. RAD FLOW

SL-II MC-670/2
Time: 20:04 CDT 15:01:04 GMT
6/7/73

PRIMARY is to COMMAND.

CC Okay, that does it. Thank you very much, Joe.

SPT And for your information the RAD FLOW secondary breaker is open with the switch in normal.

CC Roger. Copy.

CC And for CDR, your film prep pad for tomorrow is going to have your information on the jammed transporter.

CDR Okay, very good. No sweat. And we are on our way back to solar inertial. Is that what you're telling me?

CC That is affirmative, and we plan to crank up the suit dry as soon as we're back in solar inertial and we'll tell you about that at Ascension.

CDR Okay. And I also assume that sometime tonight we - you're gonna command all the AM stuff here on the BAT and so forth? Hey, we'll be around for awhile. We'll be glad to - Just so we kinda keep up with what's going on.

CC Okay, we got them all on except PCGs 1 and 2 and we're gonna have an update for you on the power system here, before you go to bed.

CDR Okay. And you got BAT A over on REG BUS 1, huh?

CC That is affirmative.

CDR Okay. I'll be interested to see how everything charges when we whip back into SI this pass.

CC Yeah, so will we.

CDR Okay. Now, therroietically with aft to forward (garble), will that handle the whole workshop load or not?

CC I guess at this point we're not exactly sure how we're going to even out, in other words, we're going to be even-steven with the ATM or I think possibly we may still be transfering a little power from the ATM side.

CDR Oh, really? You mean even if we fully powered up.

CC That's right and we're about LOS now. We should be getting Ascension here in a few minutes at 13.

CDR Okay, see you then. Bye-Bye.

PAO Skylab Control. Greenwich mean time 1 hour 01 minutes. As Skylab passed over Vanguard tracking station, we anticipate acquisition of signal over Ascension in approximately 2 minutes. During this pass Capcom Hank Hartsfield was discussing with the crew the return to solar inertial attitude. This is the fundamental flight attitude

for the Skylab vehicle. It's been on that 45 degree pitch-up attitude for the last several hours. This was placed in that attitude after the EVA, and it's returned to solar inertial attitude presently. Commander Conrad mentioned they haven't began their evening meal yet. They ate late because of the EVA and he said we're not quite hungary yet. Scheduled for the fare this evening for Commander Conrad is turkey with rice soup, prime ribs of beef, pineapple and orange drink. For Science Pilot Kerwin, he's scheduled to eat shrimp, prime ribs of beef, tomatoes, mashed potatoes, and butterscotch pudding. And Pilot Weitz is - has for his meal filet mignon, macaroni, tomatoes, and apple sauce with an orange drink. The crew was informed that the deployed orbital workshop solar array panel is producing power, presently displays on the ground indicate that the PCGs are producing approximately 900 watts of power into the vehicle. If everything goes well, the - we have air to ground now.

END OF TAPE

SL-II MC-671/1
Time: 20:13 CDT 15:01:13 GMT
6/7/73

CC Skylab, Houston. We're looking at the Y 2 gyro. (garble) and RM is taking care of it. We're still maneuvering back to SI, shouldn't take any action on your part.

CC Skylab, Houston. How do you read?

PLT Not too bad.

CC Okay, I think we had a little comm problem there for a minute. Did you copy my message on the Y2 gyro?

PLT Yes, sir.

CC Okay.

CC CDR, Houston. When do you think you all are going to get around to eating dinner?

CDR We're starting right now.

CC Okay.

CDR Tell the Surgeon not to worry. We will get our circadiam rhythm.

CC Roger, copy.

END OF TAPE

SL-11 MC-672/1
Time: 20:18 CDT 15:01:18 GMT
6/7/73

CC CDR, Houston. How do you feel about running that last ATM pass tonight? The synoptic?
CDR Yes, affirmative, okay, good. Go ahead.
CDR Okay, Henry, you still there?
CC Roger.
CDR We were instructed by the - you're aware of the ATM panel configuration, right? We have not done anything to it since the EVA.
CC That's affirmative, and we're looking at that. We got to power it up according to that message you have there 13:17 Alpha, where a couple of little changes since we turned the X-ray spec down during the EVA. And I guess we're looking at the power situation and we think we can hack it.
PLT Okay. I don't know what 13:17 Alpha was, but that was the one that said put on page C-12? No, what did it say to do with the change - with the message. (garble) said somewhere, right? (Laughter)
CC Well, it's got the panel reconfiguration for unattended OPS after EVA. Really brings it all back up.
PLT Yeah, but I meant if (garble) some of the message I think. What did the message tell me to do with those changes?
CC Says put them as page Charlie 12 of your ATM experiment checklist and data book.
PLT That's what I wanted to know. That's where it is then. Okay, thank you.
CC And the only addition to that, Paul, is to bring the X-ray spec power up. And in addition to the switches it calls for in the checklist, you got to turn your photomultiplier ENABLE and ENABLE to image dissector.
PLT Okay.
CC We're about 30 seconds from LOS. We did not get the ATM thermal loop on, but you're clear to run this pass without the thermal loop. And we're all squared away in solar inertial. We should fix ourselves up when we get the Sun again. And Guam will be coming up at 57.
SPT Okay, what time did that pass start, Henry?
CC Okay, it starts about 8 minutes and 40 seconds from now.
SPT Okay.
CC And as a reminder, we commanded 82A OFF from the ground.
PLT Okay, what Joe meant was when did the ATM pass start?

SL-1I MC-672/2
Time: 20:18 CDT 15:01:18 GMT
6/7/73

CC It starts at 01:39.
PLT Okay.
PAO This is Skylab Control. As the Skylab space station begins its 352nd revolution of the Earth, we've lost signal at Ascension. Acquisition of signal will again be over Guam, Guam Island tracking station in 32 minutes. The crew is settling down to their evening meal, with one more scheduled ATM pass for the evening with pilot Paul Weitz serving time on the console, the C&D panel control and display panel of the Apollo telescope mount. At Greenwich mean time 1 hour 24 minutes, this is Skylab Control.

END OF TAPE

SL-IV MC-673/1
Time: 20:33 CDT 15:01:33 GMT
6/7/73

PAO This is Skylab Control, Greenwich mean time 1 hour 32 minutes. As the spacecraft crosses the Mediterranean on its 352nd revolution, we have a summary of the medical conference which was conducted between Dr. Charles Ross, Skylab Flight Surgeon, and the crew over the previous Guam pass. The daily medical bulletin is as follows: The Skylab crew feels in good condition, following today's EVA. The Commander decided to perform his regular exercise protocol several hours after the EVA, since he felt that he did not receive lower extremity exercise. The EVA data which was received revealed that the science pilot, Dr. Joseph Kerwin worked for substantial periods of time in excess of 2,000 Btus per hour. He had a mean heart rate of 118 beats per minute. The Commander, Charles Conrad, had a peak work rate of 1780 Btus per hour, and a mean heartrate of 96 beats per minute. Next acquisition of signal will be over the Guam Island tracking station at 20 - in 23 minutes from now. At Greenwich mean time 1 hour 33 minutes, this is Skylab Control

END OF TAPE

SL-1I MC-674/1
Time: 20:36 CDT 15:01:56 GMT
6/7/73

PAO This is Skylab Control. Greenwich mean time 1 hour 56 minutes. Acquisition of the Guam Island tracking station is expected momentarily with Capcom Hank Hartsfield. We'll hold the line up for conversation.

PLT Houston, Skylab. Are you there?

CC Roger. Go ahead.

PLT Okay. I'm at the ATM panel trying to (garble) two and power up and 6 and power up all at the same time. Your checklist didn't get me there, but I think I'm almost there. There's two anomalies, the XUV spec door talkback is white, and remains so, whether I hit the power door switch to open or shut. And the S054 door talkback is white, and I have no READY or OPERATE lights on the experiment. And I kind of thought I'd be able to get normal operating lights on the experiment now that we've pinned the door open. I'd like you to enlighten me on both of those.

CC Roger.

CC Okay, let me get with you guys then on a problem we've been watching here, which is the secondary coolant loop. The thing got very cool during your operations and we can't seem to get the devil warmed back up and if it doesn't get back up over the switchover limit, we may be in a little trouble. What we're trying to do now is to - What we're going to do is turn the loop completely off and let the cold flex absorb a little heat. Try a thermal shock, see if we can get the temperature up above the switchover limit. As you know, the primary loops we can't use because of the stuck valve that we told you about earlier. What we're looking into now is what critical items that are on the loop that maybe we can turn off tonight so that we don't have to be waking you up, and then we can handle the situation by commands.

PLT Okay, understand.

CC And if for some reason or other we lose our command capability and don't get it turned back on at Canary's or somewhere, we're gonna turn it off now. We'd like for you to go back up and turn on the inverter 3 secondary loop.

PLT I didn't understand that last one, Hank. You want us to do that in any case or just yet.

CC Okay, if we do not tell you prior to LOS here at Guam that we have turned the loop back on, we would like you to do it at LOS, on inverter 3.

PLT (garble) 3 Charlie, right?

CC That's affirmative.

PLT Okay.

CC Skylab, for info, we're reconfiguring

SL-1i MC-674/2
Time: 20:36 CDT 15:01:56 GMT
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the GYROS right now for sleep.
PLT Roger.
CDR Hey, how does CBRM 5 look to you, Hank?

END OF TAPE

the GYROS right now for sleep.
PLT Roger.
CDR Hey, how does CBRM 5 look to you, Hank?

END OF TAPE

CC Okay, that does look a little low to us, but we think it's still okay. We just got back into solar inertial.

CDR I got a BAT charge indication on that one?

CC Say again.

CDR I got a barber pole BAT charge on that one.

CC EGIL says it ought to go awayhere pretty soon.

CDR Okay, I'll watch it.

CC PLT or CDR, either one of you available to conference some startracker information?

SPT You bet, like to.

CC Okay. If we got the bird locked on the Sun here, we gotta bring the startracker up and the gimble angles are outer 1600, inner 0068. Now, when you bring that up, if you don't acquire the star, we're gonna have to do a little search here. And we keep the inner gimble constant at plus 0068, and swing the outer gimble at steps of 200 arc minutes of 1600 through 2600.

SPT Okay, Hank, we've been doing that for two weeks.

CC Okay, you know how to do it then, and starrise is at 148 and starset's at 252.

SPT I assume it's (garble) and the gimble angles you gave me were plus. Is that right?

CC That is affirmative.

SPT Have you guys looked at the 82A doors, or - both of them indicate open?

CC Okay, on the 82A, we commanded that off today, Joe. So what's gonna happen there, you're going to have to take the power off and then back on again to cycle the pulser.

SPT (garble) I wish you people would tell me what configuration we're in. How about 54?

CC We lost our command capability, Joe. We're gonna have to have somebody bring that coolant loop up.

SPT You got a preferred time?

CC Inverter 3 pump Charlie and we're about 15 seconds from LOS. We'll be coming up on Vanguard at 37.

SPT What time do you want it on? Right now?

CC That's affirmative.

SPT Okay.

PAO This is Skylab Control, Greenwich mean time 7 hours 8 minutes. On the previous pass over the Guam tracking station, Capcom Hank Hartsfield explained to the crew what steps could be taken to correct the anomaly in the

coolant loop on board the spacecraft. The primary coolant loop has a stuck valve as reported earlier this evening, and the crew was asked to turn off the secondary coolant loop for a few minutes, and just as we lost signal at the Guam station, the crew was asked to turn it back on. Flight controllers will continue to look at the coolant loop here on the ground. And we have next acquisition at Vanguard in 27 minutes.

END OF TAPE

SL-II MC-676/1
Time: 21:33 CDT 15:02:33 GMT
6/7/73

PAO This is Skylab Control, Greenwich mean time 2 hours 33 minutes. Anticipated acquisition over the Vanguard tracking station. The problem with the coolant loop aboard the spacecraft airlock module coolant loop, which has been discussed for the last several hours, between Capcom and the Skylab crew. The problem simply - the primary loop has a stuck valve in the cold position. The secondary coolant loop has just basically gotten too cold as a result of the power down phase of the mission during the EVA system power down many instruments, many critical items were turned off to conserve power and as a result the coolant loop system got too cold. For the last pass an attempt was made to turn off - the secondary coolant loop was turned off in order to try to warm it up and give it a shock to get the system back on line. However, this was determined on ground looking at telemetry that this would not solve the problem. So the situation is now, that the ground is looking at turning critical items off, that are cooled by the coolant loop. Such critical items as transmitters, tape recorders, and the airlock module. This is being done to protect the loop in case of a failure, these instruments would not be damaged or overheated. The decision has been made to fly throughout the night in this position, leaving the secondary coolant loop on, and turning off the critical items that would be damaged in the event the coolant loop did have a failure. So, this is the information that will be passed up to the crew on the Vanguard pass. We'll hold the line open for that pass.

CC Skylab, Houston, through Vanguard, 10 minutes.

SPT Houston. SPT.

CC Go ahead.

SPT Roger. I put a number of comments on channel B about this ATM pass, one I'd like to reiterate to you the pass on is that we need up here as soon as possible, on the teleprinter, new pads, or rather new cue cards formats for power-down for unattended, dark side prep, Sunside prep, power-down operate next pass, for new configuration, and we really don't know where we are.

CC Roger, copy.

SPT Thank you.

CC For infor, we're going to be commanding the AM APS side of the house to configure that.

SPT Roger.

CC Okay, and also, on this thermal problem, we - the thermal shotgame we played while ago didn't work, and the actions we're going to take, is we're going to turn

off all this redundant gear that we had on, and trying to warm up the loop, we're going to run with a single loop tonight, with no switchover ENABLED. We've taken the critical, we will take the critical equipment off the line, we'll be safe if we do have a loop failure, the ground will pick it up and command a new inverter, and pump on the line.

SPT Okay.

CDR We need to go back to COMMAND right, Hank?

CC That should already be accomplished, Pete.

CDR Talleyho.

CC Okay, I guess when you put that inverter on while ago, maybe we ought to verify that you did go back to COMMAND after you did it.

CDR No, we didn't, you didn't tell us to. We'll go back to it now.

CC Okay, thank you. Sorry about that. In regard to your evening status report, why don't you go ahead and put the rest of it on channel B, the food part.

CDR Okay, the CDR ate everything, and he's probably going to get into the butter cookies in a minute, so put me down for two butter cookies. And the rest of the guys get - put it on B channel, because we don't have it now.

CC Okay, and for info, we're dumping the tape recorder at this site, so you ought to hold up on that until LOS.

CDR Okay, I put you back in COMMAND on secondary - -

END OF TAPE

CDR Okay, I put you back in command on secondary. You're in command on primary.
CC Thank you, sir.
CDR I said you are in command in both primary and secondary now.
CC Roger, copy. Thank you.
CC We'll be commanding up the secondary loop here, and you may get a caution and warning.
CDR Okay, why don't you get the AM Buses configured. Why don't you get the beer on the line seems to me we've just gotten extremely cold in the MBA. It's got to be about 55 up there.
CC Okay, we'll take a look at it.
CC Skylab for info, we'd like flight a night with the TACS ENABLED. Til we get this momentum squared away. It looks like - every time we take this thing and hold it out attitude for awhile out of solar inertia we have a problem getting squared away.
SPT It is ENABLED, isn't it Hank?
CC Roger, this is just info. We want - we want to say we didn't want to fly that way tonight.
SPT Okay. Good show.
CC Skylab, Houston, do we have somebody up in the AMDA now?
SPT PLT will be there shortly for you.
CC All righty.
PLT Go ahead.
CC Okay. on - on the Panel 205 I believe it is there the reg adjust. We'd like to get the reg adjust bus 1, CLOCKWISE until PCG total 1 equals total 2 and that complete our reconfiguration of PCGs 1 through 4 on REG BUS 1 and 5 to 8 on REG BUS 2.
PLT Hey, that sounds great. Holy mackril you have a nominal four for a discharge limit. Why you leaving the discharge limit inhibited, just in case you really need them, tonight yet?
CC We're just waiting til we get everything folded back up and we need about three things that were on the ATM panel to finish - to close out of that for a unattended.
PLT Go ahead.
CC Okay, S054 we need to get the exposure range to 256.
PLT Okay.
CC S056 main power on?
PLT What do you want, oh. You want the XRA power off?
CC S056 main power ON. And we need the H AMP AUTO SWITCH to OFF and that does it for tonight and we're

SL-II MC-677/2
Time: 21:40 CMT, 15:02:40 GMT
6/7/73

almost LOS and we'll beging coming up on Canary at 57.
CDR I don't understand S056 main power, you mean the high voltage power on the - -
PAO This Skylab Control, Greenwich mean time 2 hours 47 minutes with loss of signal at the Vanguard tracking station. The crew will probably be bid good night at the Ascension tracking station in approximately 9 minutes. Discussions again were between the crew and the ground we're aimed at the primary and secondary coolant loop problem. Decision has been made to turn off redundant equipment which had been turned on to warm up the secondary coolant loop. They've - critical items on that coolant loop have been taken off line for the night. The decision has been made to fly with the system for the night and if there is a failure in the system, the ground can command new inverters and pumps on from the ground. The crew is - as we say should say good night in - at Canary in 8 minutes. We'll bring the line up at that time for final reports from mission control center at Grennwich mean time 2 hours 48 minutes this is Skylab Control.

END OF TAPE

SL-11 MC-6"8/1
Time: 21:T 15:02:56 GMT
6/7/73

PAO This is Skylab Control. Greenwich mean time 2 hours 56 minutes. We will have a Canary and a Madrid pass back to back for a total probably of about 18 to 19 minutes. We'll leave the line up for conversations between Capcom Hank Hartsfield and the crew.

CC Skylab, Houston, through Canary and Madrid, 14 minutes.

SPT Fourteen minutes. Wow.

CC And I got to apologize to you, Paul, I allowed myself to pass you some bad switch nomenclature awhile ago. On S056 it was the camera power we wanted off. And on H Alpha 1, we wanted H Alpha auto switch to OFF.

SPT Okay, we finally figured it had to be the camera power switch. You should see that on. And the H Alpha 1, the exposure switch or whatever you want to call it, the auto switch is now OFF.

CC Roger. Copy. Thank you.

SPT And then we wonder when we can put the auto switch off, now that we're back in GBA auto door ENABLE.

CC The night interlock is still in override.

SPT Well, let's take it out.

CC If you want to do that -

SPT That's what I mean by needing a new checklist.

CC Roger. We concur and we're gonna have to build you something.

CDR Yeah, but Hank, do me a favor, have those guys do it and work on it, and practice with it in the simulator, and work on it, and don't send us one til it's the right one.

CC Roger, that.

CDR All we got is 8 billion yards of bits and pieces of ATM stuff written all over everything, including the wall.

END OF TAPE

SL-II MC-679/1
Time: 22:04 CDT 15:03:04 GMT
6/7/73

CC Skylab, Houston. We're about 1 minute from LOS. The ATMDC is taking care of the momentum. There's a very remote possibility that we might get an anomaly nominal H-cage on the next dump. However, if that doesn't occur you ought to be good for the night, and how would you like to wake up in the morning?

CDR Okay, and what is (garble) time.

CC We have Bermuda at 11:00.

CDR Let's hear from you then. Thank you very much Hank, we'll see you in the morning.

CC Okay, you want a call at Bermuda.

CDR Yes, please.

CC Okay, will do. You guys get a good night's rest. You've earned it.

CDR Thank you.

SPT Good night, Houston.

CC And EGIL thanks you for the power.

CDR You're welcome, you're welcome.

CDR Oh, hey, Hank. Are you there?

CC Roger.

CDR Okay, I'm sorry. I had corn scheduled in my menu today, and I made the scheduled subsitution, which was German potato salad.

CC Roger. Copy.

CDR Thank you.

PAO This is Skylab Control. Greenwich mean time 3 hours 12 minutes, with loss of signal over Madrid. The crew was bid good night for the evening. And they are scheduled to sleep in the orbital workshop sleep compartments. Their 10th night sleeping in the workshop. Tomorrow, Friday, is June 8th, it will be the 15th day of the mission. The crew is starting their second full week in the workshop. Experiment-wise they are scheduled to do the M092, lower body negative pressure device, and 171, metabolic analyzer. Subject to those experiments will be Pilot Paul Weitz. Also scheduled for today are several hours of manned operation of the Apollo telescope mount. At Greenwich mean time 3 hours and 13 minutes, this is Skylab Control.

END OF TAPE

SL-II MC-680/1
Time: 22:34 GMT, 15:03:34 GMT
6/7/73

PAO This is Skylab Control, Greenwich mean time 3 hours 34 minutes. We have acquisition tentatively at the Guam tracking station for 3 minutes if the crew is still up and about we will more than likely hear from them. To recap the coolant loop discussions which have been going on for the last several hours here at the Mission Control Center; the - refers to the airlock module coolant loop. The coolant loop is an active thermal coolant from - which removes and dissipates waste heat which is due to the operation in the cluster equipment and metabolic heat loss. Active cooling is provided to EVA - extravehicular activity - the intravehicular activity - IVA - intravehicular suit cooling module condensing heat exchangers, cabin heat exchangers, three tape recorder cold plates, oxygen heat exchanger, the Apollo telescope mount control and display panel heat exchanger, battery modules and six electronic modules. There are two loops on board, primary and secondary. The primary loop which reportedly has a open valve in the cold situation; the secondary loop due to the fact that the vehicle was powered down for a great length of time during EVA exercises this afternoon. The vehicle being powered down, no heat was generated in the spacecraft therefore the systems - the coolant loop itself got too cold. The temperatures have been rising slightly in the secondary cooland loop in the last couple of passes. The ground has turned off the critical items aboard the spacecraft so if the pumps fail n secondary cooland loop; that critical equipment would not be damaged. We'll leave the line up now for any possible conversation between CAPCOM Hank Hartsfield and the crew of Skylab.

CC SPT, Houston?

CC Skylab, Houston?

CDR Go ahead, Houston.

CC Hey, sorry to bother you guys but this coolant loop is getting away from us and we're going to have to do something with it, it's down two - two degrees freezing now and we're going to have to get you up and working so we can get the thing warmed up. Looks like it may do is freeze up the condensing heat exchanger and that in a powerful situation. We'd like for you t. get the AM circ fans on and bring up the ATMC&D coolant loop and our plan is which we're hoped to have for you by Canary is we're going to hook up an LSU to one of the SUS outlets to PCU then use that LCG adapter we have and hook up an LCG and get it down in the hot part of the workshop there, somewhere - maybe near one of the water tanks and see if we can't start warming up this coolant loop.

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Time: 22:34 GMT, 15:03:34 GMT
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CDR Okay. We'll begin. We'll work right now.
SPT AM coolant loop, the circ fans and the ATM coolant loop.
CC That's affirmative. Sorry to do this do you guys. We're going to let you sleep late in the morning.
CDR No, we want to keep the show running, pal. don't worry about that.
CC Houston. We want you to use SUS 2 on this LSE hookup; we'd like you to get the whole thing connected up and if possible delay the Canarys to turn it on. You'll have to use that special adapter to hook up the LCG to the PCU and we want the diverter valve to set to position 5, we haven't found the stowage location yet for those adapters.
CDR We're working at it.
CC Okay, I have - FAO says there in 920 center sleep compartment and we want you to hook up two of them if possible - two LCGs and we're about LOS now and will be coming up on Canarys in 36.
PAO This is Skylab Control, Greenwich mean time 3 hours 52 minutes. The crew was alerted over the Honeysuckle Station to - to go through procedures and attempt to bring up the temperature in the secondary coolant loop which at present is 2 degrees below freezing. The plan is to take a LCG - liquid cooling garment and attach it to the coolant loop system in an attempt to raise the temperature. In effect what the LCG would be serving as would be a heat exchanger. The procedures will be worked up and passed up to the crew on the Canary pass and the efforts to correct the coolant loop problem will not be attempted until the Skylab Space Station has acquisition of signal at Canary in 42 minutes and 47 seconds from now. Greenwich mean time 3 hours 53 minutes, this is Skylab Control.

END OF TAPE

SL-II MC-681/1
Time: 23:30 CDT 15:04:29 GMT
6/7/73

PAO This is Skylab Control, Greenwich mean time 4 hours 29 minutes, with acquisition at Canary Island scheduled in approximately 6 minutes. Flight Director Neil Hutchinson and his team of silver flight controllers have been working for the last hour on procedures to pass up to the crew over the Canary Island station on a troubleshooting to solve the overly cold water coolant system for the coolant loop Plan - tentative plan now is to take the liquid cooled garment, which is the undergarment that the astronauts wear next to their skin during EVA. This garment has got plastic tubes in it to which liquid is passed to keep the astronauts cool during EVA. The liquid cooled garment will be placed on the wall of the dome area of the workshop behind a water tank. One of the ten water tanks aboard the spacecraft. The water tanks are hot, a portable fan will be placed next to the garment to blow over the garment to make it hot laying over the water tanks. The garment will be hooked up to the coolant loop which is a normal operation during EVA exercises. The coolant loop provides support to the extravehicular activities of the astronauts. As the garment gets warm, the liquid in the garment will get hot, and that will in turn be pumped through the coolant loop in an attempt to raise the temperature of the coolant loop, to bring it back within tolerance. At last analysis the temperature was two degrees below zero. And this procedure hopefully will return the coolant loop to a satisfactory temperature where the crew can close up and go back to sleep for the night. Canary, we will have acquisition at Canary Island in 4 minutes from now. We will bring the line back at that time. Greenwich mean time 4 hours 31 minutes, this is Skylab Control.

END OF TAPE

couple of you could go now, if you like. And we'll try to determine whether this is going to be a permanent situation or whether it's temporary. In any event, we're out of the woods right now on the immediate problem.

SC — Okay, we'll see you at Carnarvon.
CC — PCG 4 looks okay to us, Pete.
SC — Roger.
PAO — Skylab Control; Greenwich mean time 4 hours 49 minutes with loss of signal over Madrid. The procedures passed up to the crew were implemented. Placement of the LCG, liquid cooling garment, was placed near the hot water tank aboard the vehicle. And the pumps were turned on, and the temperature in the coolant loop went up approximately 10 degrees in the short span of one pass over Madrid. The crew is being instructed to get ready to bed down for the night. We're going to keep this system going for the next pass over Carnarvon in 24 minutes. The problem seems to be solved at this time. At Greewich mean time 4 hours 50 minutes, this is Skylab Control.

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